STIC-Biotech/ChemLib

73796

From:

Chan, Christina

Sent: To: Subject: Tuesday, August 20, 2002 3:19 PM Wilder, Cynthia; STIC-Biotech/ChemLib RE: Rush sequence search 09/835,082

12E11

Please rush. Thanks Chris

----Original Message-----

From:

Wilder, Cynthia

Sent:

Tuesday, August 20, 2002 12:14 PM

To:

Chan, Christina

Subject:

Rush sequence search 09/835,082

Ms. Chan,

I am requesting a Rush sequence search for 09/835,082 due to a low docket. Please forward your approval to STIC.

Please search the nucleic acid encoded by SEQ ID NO: 1 and SEQ ID NO: 3.

Thank you!

Cynthia B. Wilder, Ph. D. Art Unit 1637 703/305-1680 Office No. 12£11 Mailbox No. 10£12

> Edward Hart Technicai Info. Specialist STIC/Biotech CMI 6B02 Tel: 305-9203

Searcher:
Phone:
Location:
Date Picked Up:
Date Completed: 8/2/102
Searcher Prep/Review:
Clerical:
Online time:

VENDOR/COST (w	here applic.)
STN:	
DIALOG:	
Questel/Orbit: _	
DRLink:	
Lexis/Nexis:	
Sequence Sys.:	<i>Q</i> 5
WWW/Internet:	
Other (specify):	

	·		No.	
·				
	·		·	
•				

1252 gttctggaaatgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaa 1311	agttucaaggagaacatcatgcgcctctccagccttcacaaggaccgccggtggagccg 1371	ctggacctggccgtgttctgggtggagtttgtgatgaggcacaaagggcgcgcacactg 1431	1432 egececgeageccaegaecteacetggtaccagtaccatteettggaegtgattggttte 1491	1492 ctcttggccgtcgtgctgacagtggccttcatcaccctttaaatgttgtgcttatggctac 1551	1552 cggaaatgcttggggaaaaagggcgagttaagaaagccacaaatccaagacccattga 1611	gaagtgggtgggaaataaggtaaaattttgaaccattcct 1652
1252 gttct	1312 agtta	1372 ctgga	1432 cgccc	1492 ctctt	1552 cggaa	1612 gaagt
421 gtcct	481 agcta	541 ctgga	601 cgccc	661 ctcc	721 cggaa	
Oy Dp	O P P	Oy Op	oy Op	9 G	g g	à à

Search completed: August 21, 2002, 12:45:22 Job time: 22240 sec

.

```
ö
                                                                                                                                                                     115 atggatgggagccactggttcaccatgaggtcggtggtggagaaactcattctcaggggg 174
                                                                                                                                                                                                                                                                                  61 catgaggtggttgtagtcatgccagaggtgagttggcaactggaaagatcactgaattgc 120
                                                                                                                                                                                                                                                                                                                                                                                                                       481 gatctcttagggttctcagatgccatgactttcaaggagagagtatggaaccacatcgtg 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601 gaaattetecaaaceeetgteacggeatatgatetetacagteacateaatttggttg 660
                                                                                                                                                                                                                                               175 catgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgc 234
                                                                                                                                                                                                                                                                                                                        235 acagigaagacitaticaacitcataccciggagatciggaccgggagitcaaggct 294
                                                                                                                                                                                                                                                                                                                                                            121 acagigaagacitacicaaccicgiacacicigaagaicagaaccgggaaitcaiggii 180
                                                                                                                                                                                                                                                                                                                                                                                               295 tttgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaatgggttca 354
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         415 ttagtagaatacttaaaggaggttcttttgatgcagtgtttctcgatccttttgataac 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            655 cacttggaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctc 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               775 ttgcgaacggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcatt 834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      475 tgtggcttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaata 534
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             535 ctttgccactatcttgaagaaggtgcacagtgccctgctcctcttcctatgtccccaga 594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   595 attetettagggtteteagatgecatgaettteaaggagagagagtaeggaaecaeateatg 654
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541 cacttggaggaccatttattttgccagtatctttttagaaatgccctagaaatagctct 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       715 gaaattetecaaacaeetgttaeggagtatgatetetaeageeacaecateaatttggttg 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                         1 atggagagtcactggttcaccatgcagtcggtggtggagaaacttatcctcaggggg 60
                                                                                                                                     ·,
                                                                                                DB 21; Length 759;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Apoptosis; mouse; cancer; autoimmune disease; viral infection;
animals or modified cells e.g. for pharmacogenetic screening.
                                                                                                                                     62; Indels
                                      Sequence 759 BP; 190 A; 165 C; 169 G; 235 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        835 ggtggtatcaactgccatcagggaaagccgttgcctatg 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          721 ggtggtatcaactgtcatcagggaaagccattgcctatg 759
                                                                                            28.4%; Score 659.8; DB 21
91.8%; Pred. No. 4.4e-177;
tive 0; Mismatches 62;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Murine apoptosis related DNA sequence #133.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ABL01468 standard; DNA; 874 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-MAR-2002 (first entry)
                                                                                                                                 697; Conservative
                                                                                                              Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABL01468;
                                                                                            Query Match
                                                                                                                                   Matches
  S X S
                                                                                                                                                                     ô
                                                                                                                                                                                                         q
                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
```

```
The present invention relates to nucleic acids from the mouse, where the nucleic acid is associated with apoptosis. The sequences can be used in the diagnosis, treatment and prevention of diseases associated with excessive or inadequate apoptosis, including tumnours, autoimmune diseases, viral infections, degradative diseases (Alzheimer's, Parkinson's and Huntington's diseases), reperfusion injury, stroke and alcohol-induced injury to the liver, for identifying agents for treating these diseases, and to prepare transgenic animals in which expression of an apoptosis related sequence is altered. These are useful for genetic and/or pharmacological investigations of apoptosis and related diseases, including dilatory cardiomyopathy. The present sequence is one of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1012 tggcggtacactggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtgg 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1072 ctaccccaaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggt 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1132 tcccatggtgttttatgaaagcatatgcaatggcgttcccatggtgatgatgccttgttt 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1192 ggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaat 1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  952 ccagagaagaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctg 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  301 tcccatggtatttatgaaggaatatgcaatggagttccgatggtgatgatgatgcccctattt 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      892 aatgettetggagaacatggaattgtggttttetetttgggateaatggteteagaaatt 951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 aacgcctctggggagcatggcatcgtggttttctctttgggatccatggtctcagagatt 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 ccggagaagaagccatggaaattgctgaggctttgggcagaattcctcagacggtcctg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 tggcgctacaccggaactagaccatcgaatcttgcaaagaacacaattcttgtcaaatgg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          241 ctaccccaaaatgatctgcttggtcatccaaagactcgggcattcatcacacactctggc 300
Alzheimer's disease; Parkinson's disease; Huntington's disease; reperfusion injury; stroke; liver damage; dilatory cardiomyopathy; transgenic animal; hepatotropic; antialcoholism; cytostatic; immuosuppressive; virucide; nootropic; neuroprotective; vasotropic; antiparkinsonian; cerebroprotective; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                   Cramer U, Gewies A, Voss F;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        for diagnosis, treatment and prevention of e.g. tumors and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New apoptosis-associated nucleic acid sequences and polypeptides
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24.9%; Score 578.8; DB 24; Length 874; 84.9%; Pred. No. 5.3e-154; tive 0; Mismatches 115; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 874 BP; 222 A; 202 C; 233 G; 210 T; 7 other;
                                                                                                                                                                                                                                                                                                                                                                     (PLAC ) MAX PLANCK GES FOERDERUNG WISSENSCHAFTEN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           including dilatory cardiomyopathy. The presen apoptosis related sequences of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                 Schoenfeld N, Braziulis E, Cı
ılbayrak T, Gille H, Klein M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Claim 1; Page 184; 227pp; German.
                                                                                                                                                                                                                                                                          30-MAY-2001; 2001DE-1026344.
                                                                                                                                                                                                                                                                                                                        14-JUL-2000; 2000DE-1034303.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                       Albayrak T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 2002-115563/16.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               neurodegeneration -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity
                                                                                                                                                                                 DE10126344-A1.
                                                                                                                                                                                                                                24-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        646;
                                                                                                                                                                                                                                                                                                                                                                                                                 Grimm S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                       Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Aatches
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
```

ö

WPI; 2000-052981/04. P-PSDB; AAY57100. New nucleic acid representing polymorphisms in the human uridine diphosphate glucuronosyltransferase gene, used for diagnosis and evaluation of drug metabolism

Examples, Page 43-44; 63pp; English.

Nucleotide sequences AA245110-245118 are exons 1A-1J of the human uridine diphosphate-glucuronosyltransferase 1 (UGT1) gene. The UGTS are a family of enzymes that catalyse the glucuronic acid conjugation of a wide cannot be an originally of enzymes that catalyse the glucuronic acid conjugation of a wide cannot and exogenous substrates including phenols, allohols, amines and fatty acids. Many of the reactions catalysed by UGTS casult in toxic substances being converted to compounds which are more water soluble and are excreted. The invention relates to and identifies UGT1 polymorphisms (AA25004-24504). The polymorphisms sequences are useful as probes for detecting UGT1 locus polymorphisms, indicative of altered UGT1 expression or activity. These polymorphisms are associated with Cricler-Najjar and Glibert syndromes (unconjugated cut of UGT1 expression or activity, These polymorphisms are associated to when the cricler-Najjar and dilbert syndromes (unconjugated cut of UGT1 expression or metabolism. The genotyping of the UGT1 gene cut of predict the rate of metabolism. The genotyping of the UGT1 gene cut of is used to predict the rate of metabolism. The genotyping of the UGT1 consumption of the UGT1 expression or activity. The UGT1 consumption of the UGT1 expression of metapolisms, can also be used to produce the corresponding protein (or its fragments) or to generate transgenic animals or modified cells e.g. for pharmacogenetic screening.

Sequence 735 BP; 189 A; 179 C; 187 G; 180 T; 0 other;

994 atccetcagacagtcctgtggcggtacactggaacccgaccatcgaatcttgcgaacaac 1053 1054 acgatacttgttaagtggctaccccaaaacgatctgcttggtcacccgatgaccgtgc 1113 1174 gtgatgatgcccttgtttggtgatcagatggacaatgcaaagcgcatggagactaaggga 1233 1294 gcagtcatcaatgacaaagttacaaggagaacatcatgcgcctctccagccttcacaag 1353 874 gaatttgaagcctacattaatgcttctggagaacatggaattgtggttttctctttggga 933 934 teaatggteteagaaatteeagagaaagatatggeaattgetgatgettgggeaa 993 61 tcaatggtctcagaaattccagagaagaagctatggcaattgctgatgctttgggcaaa 120 121 atccctcagacagtcctgtggcggtacactggaacccgaccatcgaatcttgcgaacaac 180 181 acgatacttgttaagtggctaccccaaaacgatctgcttggtcacccgatgacccgtgcc 240 0; Gaps Length 735; 0; Indels 31.7%; Score 735; DB 21; I 100.0%; Pred. No. 1.7e-198; ttive 0; Mismatches 0; Matches 735; Conservative Similarity Query Match 8 ò à g g ð á g ð a ô ð a

uridine diphosphate-glucuronosyltransferase I (UGT1) gene. The UGTs are a family of enzymes that catalyse the glucuronic acid conjugation of a wide range of endogenous and exogenous substates including phenols, alcohols, amines and faity acids. Many of the reactions catalysed by UGTs ace alcohols, amines and faity acids. Many of the reactions catalysed by UGTs cault in toxic substances being converted to compounds which are more cerult in toxic substances being converted to compounds which are more useful as probes for detecting UGT1 locus polymorphisms equences are custom as probes for detecting UGT1 locus polymorphisms indicative of altered UGT1 expression or activity. These polymorphisms are associated with Crigilar walpar and Gilbert syndromes (unconjugated configuration) and Gilbert syndromes (unconjugated configuration) and configuration and drug metabolism. The gencypling of the UGT1 gene configuration and drug metabolism. The gencypling of the UGT1 gene configuration and drug metabolism of UGT1 substates, possible configuration and drug metabolism of UGT1 substates, possible configuration and drug metabolism of ucid in the UGT1 configuration on enzymatic activity. The UGT1 corresponding protein (or its fragments) or to generate transgenic Uridine diphosphate-glucuronosyltransferase 1; UGT1; polymorphism; probe; glucuronic acid; Crigler-Najjar syndrome; Glibert syndrome; jaundice; unconjugated hyperbilirubinaemia; drug metabolism; transgenic animal; pharmacogenet.c screening; diagnose; ss. 1414 aagggcgccacacctgcgcccgcagcccacgactcactggtaccagtaccattcc 1473 1474 ttggacgtgattggtttcctcttggccgtcgtgctgacagtggccttcatcacctttaaa 1533 541 aagggcgcgcacactgcgccccgcagcccacgactcactggtaccagtaccattcc 600 601 tiggacgtjatiggtticctcttggccgtcgtgctgacagtggccttcatcacctttaaa 660 UDP-glucuronosyltransferase 1 (UGT1) exon 1J nucleotide sequence. Nucleotide sequences AAZ45110-Z45118 are exons 1A-1J of the human New nucleic acid representing polymorphisms in the human uridine diphosphate glucuronosyltransferase gene, used for diagnosis and Examples; Page 42; 63pp; English. AAZ45117 standard; DNA; 759 BP. evaluation of drug metabolism 99WO-US09702. 98US-0084807. 28-FEB-2000 (first entry) 1594 aaatccaagacccat 1608 721 aaatccaayacccat 735 (AXYS-) AXYS PHARM INC. WPI; 2000-052981/04. P-PSDB; AAY57099. Homo sapiens. WO9957322-A2 04-MAY-1999; 07-MAY-1998; 11-NOV-1999. AAZ45117; Penny L, RESULT 14 AAZ45117 δ g g ŏ g

```
Curidine diphosphate-glucuronosyltransferase 1 (UGT1) gene. The UGTs are a cardine diphosphate-glucuronosyltransferase 1 (UGT1) gene. The UGTs are a cardine diphosphate-glucuronosyltransferase 1 (UGT1) gene. The UGTs are a cardine family of enzymes that catalyse the glucuronic acid conjugation of a wide cannot be an excepted and exogenous substrates including phenols.

Calcohols, amines and fatty acids. Many of the reactions catalysed by UGTs cardine and are excreted. The invention relates to and identifies user soluble and are excreted. The invention relates to and identifies useful as probes for detecting UGT1 locus polymorphisms sequences are cusful as probes for detecting UGT1 locus polymorphisms are associated with crigler whijar and dilbert syndromes (unconjugated with crigler whijar and dilbert syndromes (unconjugated with crigler whijar and dilbert syndromes (unconjugated to predict the rate of metabolism. The gencyping of the UGT1 gene is used to predict the rate of metabolism of UGT1 substrates, possible drug-drug interactions and adverse side effects (i.e. to optimize drug cauged and the effects of polymorphisms on enzymatic activity. The UGT1 sequences, including polymorphisms on enzymatic activity. The UGT1 corresponding protein (or its fragments) or to generate transgenic corresponding protein (or its fragments) or to generate transgenic
                                                                                        Uridine diphosphate-glucuronosyltransferase 1; UGT1; polymorphism; probe; glucuronic acid; Crigler-Najjar syndrome; Glibert syndrome; jaundice; unconjugated hyperbilirubinaemia; drug metabolism; transgenic animal; pharmacogenetic screening; diagnose; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       139 atgaggtcggtggtggagaaactcattctcagggggcatgaggtggttgtagtcatgcca 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  199 gaggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttca 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 atgcagtcggtggtggagaaactcatcctcagggggcatgaggtggtcgtagtcatgcca 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels 0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       19 atggettgeacagggtggaccagecectteetetgtgtgtgtgtctgetgaccgt 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 atggctcgtgcagggtggactggcctccttcccctatatgtgtgtctactgctgacctgt 60
UDP-glucuronosyltransferase 1 (UGT1) exon 1G nucleotide sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 New nucleic acid representing polymorphisms in the human uridine diphosphate glucuronosyltransferase gene, used for diagnosis and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match 31.9%; Score 741.2; DB 21; Length 951; Best Local Similarity 90.5%; Pred. No. 3.5e-200; Matches 791; Conservative 0; Mismatches 83; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             animals or modified cells e.g. for pharmacogenetic screening.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 951 BP; 229 A; 211 C; 214 G; 297 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Examples; Page 37-38; 63pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   evaluation of drug metabolism -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99WO-US09702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0084807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (AXYS-) AXYS PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-052981/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Penny L, Galvin M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAY57097
                                                                                                                                                                                                                                                                                                                                                                                                                                         W09957322-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11-NOV-1999.
```

```
Uridine diphosphate-glucuronosyltransferase 1; UGT1; polymorphism; probe;
glucuronic acid; Crigler-Najjar syndrome; Gllbert syndrome; jaundice;
unconjugated hyperbilirubinaemia; drug metabolism; transgenic animal;
                                                                                                                                                                                                                                                   799 tatcccaaacccgtgatgcccaacatgatcttcattggtggtatcaactgccatcaggga 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       781 tateccaaaceegtgatgeecaatatgatetteattggtggtateaaetgteateaggga 840
                                                                                                                                                                                                           619 atgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatgc 678
                                                                                                                                                                                                                                                                                                                                                                                                             601 atgactitcaaggagagagatatggaaccacatcatgcacttggaggaacattatittgc 660
                                                                                                                                                                                                                                                                                                                                                                                                                                             679 caccgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttacg 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gagtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttggac 798
259 tataccctggaggatctggaccgggagttcaaggcttttgcccatgctcaatggaaagca 318
                  379 ttttcaaattgcaggagtttgtttaaagacaaaaattagtagaatacttaaaggagagt 438
                                                                                                                                          439 tottittgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaatat 498
                                                                                                                                                                                                                                                                                                                  559 gcacagtgccctgctcctttcctatgtccccagaattctcttagggttctcagatgcc 618
                                                                                                                                                                                                                                                                                                                                                 541 gcacagigcccigciccititiccialgiccccagacticitiagggiticicagacgcc 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              561 ccctattttttcaaaaatgtcttagaaatagcctctgaaattctccaaacccctgtcacg 720
                                                               319 caagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttattt 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UDP-glucuronosyltransferase 1 (UGT1) exons 2-5 nucleotide sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        859 aagccgttgcctatggaatttgaagcctacatta 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     841 aagccagtgcctatggtaagttatctccccttta 874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pharmacogenetic screening; diagnose; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ВР
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99WO-US09702.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      98US-0084807.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAZ45118 standard; DNA; 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 28-FEB-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AXYS-) AXYS PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           W09957322-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        04-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11-NOV-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAZ45118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAZ45118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q
                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                  g
                                                                                               g
                                                                                                                                ŏ
                                                                                                                                                                                          δ
                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                       ò
```

Penny L, Galvin M;

g ò Ω ð

d

ö

```
Nucleotide sequences AA245110-245118 are exons 1A-1J of the human uridine diphosphate-glucuronosyltransferase 1 (UGT1) gene. The UGTs are a family of enzymes that catalyse the glucuronic acid conjugation of a wide range of endogenous and exogenous substrates including phenols.

Tange of endogenous and exogenous substrates including phenols, alcohols, amines and fatty acids. Many of the reactions catalysed by UGTs alcohols, amines and fatty acids. Many of the reactions catalysed by UGTs centl in toxic substances being converted to compounds which are more water soluble and are excreted. The invention relates to and identifies UGT1 polymorphisms (AAZ45004-245041). The polymorphisms are associated useful as probes for detecting UGT1 locus polymorphisms, indicative of altered UGT1 expression or activity. These polymorphisms are associated with crigier Najjar and Gilbert Syndromes (unconjugated the UGT1 gene is used to predict the rate of metabolism. The genotyping of the UGT1 gene is used to predict the rate of metabolism. Gutting substrates, possible chrud-drug interactions and adverse side effects (i.e. to optimize drug dosage), and to screen for diseases caused by exposure to toxins and to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Uridine diphosphate-glucuronosyltransferase 1; UGT1; polymorphism; probe; glucuronic acid; Crigler-Najjar syndrome; Glibert syndrome; jaundice; unconjugated hyperbilirubinaemia; drug metabolism; transgenic animal; pharmacogenetic screening; diagnose; ss.
                                                                                                                                    2211 tgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaaaataca 2270
                                        601 catalgatttettgetttggggaaaaagaatgatgetatgaaattggtggtggtgtatt 660
                                                                                                                                                                                                                                661 tgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaaaataca 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                study the effects of polymorphisms on enzymatic activity. The UGT1 sequences, including polymorphisms, can also be used to produce the corresponding protein (or its fragments) or to generate transgenic animals or modified cells e.g. for pharmacogenetic screening.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     UDP-glucuronosyltransferase 1 (UGT1) exon 1H nucleotide sequence.
New nucleic acid representing polymorphisms in the human uridine diphosphate glucuronosyltransferase gene, used for diagnosis and evaluation of drug metabolism \,
                                                                                                                                                                                                                                                                                                                 Sequence 930 BP; 228 A; 205 C; 212 G; 285 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Examples; Page 39-41; 63pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAZ45116 standard; DNA; 930 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     98US-0084807.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         99WO-US09702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    28-FEB-2030 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (AXYS-) AXYS PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2000-052981/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Penny L, Galvin M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 P-PSDB; AAY57098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    04-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  W09957322-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-NOV-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAZ45116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAZ45116
```

```
259 tataccetggaggatetggaccgggagttcaaggettttgcccatgetcaatggaaagca 318
                                                                                                                                                                                                                                                                                                                                                          319 caagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttattt 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          379 ttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagagt 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              439 tettitgatgeagtgtttetegateettttgataactgitggettaatigitgeeaaatat 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          421 tettttgatgeggtgtttettgateettttgatgeetgtgegttaattgttgeeaaatat 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           499 tteteceteceetecgtggtettegecaggggaataetttgecactatettgaagaaggt 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481 ttetecetecetetgtggtettegecaggggaataggttgecactatettgaagaaggt 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           559 gcacagtgcctgctcctctttcctatgtcccagaattctcttagggttctcagatgcc 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          541 gcacagtgccctgctcctcttcctatgtccccagaattctcttagggttctcagatgcc 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           619 atgactttcaaggagagagagtacggaaccacatcatgcacttggaggaacatttattatgc 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              679 caccgtttttcaaaaatgcctagaaatagcctctgaaattctccaaacacctgttacg 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               661 cagtatttttccaaaaatgccctagaaatagcctctgaaattctccaaacacctgtcaca 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              739 gagtatgatetetacagecacacateaatttggttgttgegaaeggaetttgttttggae 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               721 gcatatgatctctacagccacacatcaatttggttgttgcgaacagactttgttttggac 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                799 tatcccaaacccgtgatgcccaacatgatcttcattggtggtatcaactgccatcaggga 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                   19 atggettgeacagggtggaccagececttectetatgtgtgtgtgtgctgctgacctgt 78
                                                                                   ö
33.0%; Score 766.6; DB 21; Length 930; 91.6%; Pred. No. 2.1e-207; Live 0; Mismatches 74; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  859 aagccgttgcctatggaatttgaagcctacattaatgcttctgga 903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841 aagccattgcctatggtaagtcacctctcctttagcacattagga 885
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAZ45115 standard; DNA; 951 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      28-FEB-2000 (first entry)
                                    Matches 811; Conservative
                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ45115;
     Query Match
                     Local
                                                                       ŏ
                                                                                                    쉽
                                                                                                                                                                    g
                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                       ò
                                                                                                                                                                                                      ô
                                                                                                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
```

```
Human; biallelic marker; single nucleotide polymorphism; SNP; MGSTII; malter decarboxylase enzyme; microsomal glutathione S-transferase II; malter decarboxylase enzyme; DMEI; WEI; cytochrome P450; glutathione reductase; GSHR; GSHS; GGT5; flavin-containing monooxygenase; FMO; gamma-glutamyltransferase 5; dipeptidase; DP; glucose 6-phosphate dehydrogenases; GGDB; haplotype; phosphogluconate dehydrogenase; PGDB; drup metabolism; phenotype; uridine diphosphate glucoronosyl transferase; UGT2; asthma; hepatoxicity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human UGT1A7 related DNA containing a biallelic polymorphism SEQ ID 296.
2010 aattgatccttaaccaataatggtcagtcctcatctctgtcctgcttcatagtgccacc 2069
                                 980 aattgatccttaaccaataatggtcagtcctcatctctgtcgtgcttcataggtgccacc 1039
                                                                                    2155 tgatttcttgctttggggaaaaagaatgatgctatgaaattggtggtggtgtgtttgag 2214
                                                                                                                                                                                                                                                                                                                                          2215 aagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagcta 2274
                                                                                                                                                                     1100 ttggagtgcactgagaacagcatatgatttcttgctttggggaaaaagaatgatgctatg 1159
                                                                                                                                                                                                                                        1160 aaattggtggtggtgtagtgaaatgaatgaatgaatggcttggagtgcactgagaacagcata 1219
                                                                                                                                                                                                                                                                                                          1220 tgatttcttgctttggggaaaaagaatgatgctatgaaattggtggtggtgtgtatttgag 1279
                                                                                                                                                                                                                                                                                                                                                                           1280 aagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagcta 1339
                                                                                                                                                                                                       2113 -----gtgaaatgaatgaatgaatgaatgagtgcactgagaacagcata
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Blumenfeld M, Bougueleret L, Chumakov I, Cohen-Akenine A;
                                                                                                                                                                                                                                                                                                                                                                                                              2275 tgaagtgctgggcaagtttacttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                2070 ttgtgtgtttaaagaagggaagctttgtacctttagagtgtag---
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAH51405 standard; DNA; 1001 BP
                                                                                                                                      2113 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            24-MAR-2000; 2000WO-IB00403.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0126269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               99US-0131961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 29-AUG-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 2000-638353/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200058508-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GEST ) GENSET.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           05-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAH51405;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 10
                                                                                                 g
                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                    δ
                                                                                                                                    à
                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
```

Sequences AAH51110-AAH51593 represent human DNA fragments which contain biallelic markers. The sequences are related to various human genes including microsomal glutathione S-transferase II (MGSTII), malate

Polynucleotides comprising sequences from malate decarboxylase enzyme-related biallelic markers used for genotyping -

Claim 13; Page 488-489; 673pp; English.

```
decarboxylase enzyme (DMEL/MEI), cytochrome P450, glutathione

CC decarboxylase enzyme (GSHR/GSHS), flavin-containing monooxygenases (FWO),

Gamma-glutamyltransferase 5 (GGTS), dlepetidase (DF), glucose 6-phosphate

C dehydrogenase (G6PBH), phosphogluconate dehydrogenase (FEDH), and uridine

diphosphate glucoronosyl transferases (UGT2). Each of these sequences

CC diphosphate glucoronosyl transferases (UGT2). Each of these sequences

CC diphosphate glucoronosyl transferases (UGT2). Each of these sequences

CC diphosphate glucoronosyl transferases (UGT2). Each of these sequences

CC diphosphate glucoronosyl transferases (UGT2). Each of these sequences

CC diphosphate glucoronosyl transferases (UGT2). Each of these sequences

CC marker containing sequences are related are involved in drug metabolism.

Sequences AAH51594 - AAH51598 represent the genomic sequence of the

MGSTII gene and four alternative MGSTII cDNA sequences. AAB62905-AAB62906

CC marker containing sequences are related are involved in drug metabolism.

CM GASTII gene and four alternative MGSTII cDNA fragments. The

invention includes a method of genotyping comprising decemining the

condition of an allele of a DME- or MGSTII related biallelic marker in

copulation of an allele of a DME- or MGST-II related biallelic marker and

CC treatment. The method is also used to detect association between allele

and phenotype, and to detect association between haplotype and phenotype.

CC Treatment. The method is also used to detect association between haplotype and phenotype.

CC Treatment whether an individual suffers or is at IIsk of developing

CC allele specific amplification assays. The method can be used to

calcher a trisk of developing hepatoxicity on treatment with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1551 ccggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaaatccaagacccattg 1610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1611 agaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaacttga 1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1791 aaagatatttgaatatgtatcgtgcccctccggtgtcttttgatcaggatgacatgtgcc 1850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1851 attittcagaggacgtgcagacaggctggcattctagattactttcttactctgaaaca 1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1971 cagitittaaicttaictittggcitcigaaaiggitgcaaitgaiccitaaccaaiaai 2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2031 ggtcagtcctcatctctgtcctgcttcataggtgccaccttgtgtgttttaaagaagggaa 2090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1671 aaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcataaattaa 1730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1731 tcagccccagaqtgctttaaaaaattctcttaaataaaaataagactcgctagtcagt 1790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1911 tggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgcccctactgcaaatgg 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2151 catatgatttcttgctttggggaaaaagaatgctatgaaattggtggtggtgtatt 2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       241 aaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgcc 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             361 tggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgcccctactgcaaatgg 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421 cagttttaatettatettttggettetgcagatggttgcaattgateettaaceaataat 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481 ggtcagtcctcatctctgtcstgcttcataggtgccaccttgtgtgtttaaagaagggaa 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 ccggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaaatccaagacccattg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33.2%; Score 769.6; DB 21; Length 1001; 99.9%; Pred. No. 3e-208; tive 1; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1001 BP; 315 A; 169 C; 205 G; 311 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Local Simi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               zileuton.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
```

```
/*tag= c
/note= "encodes part of transferase C-terminal; see CC"
1389..1394
                                                                                                                                                              2170 gggawaaagaatgatgctatgaaattggtggtggtgtatttgagaagataatcattgct 2229
                    2110 taggigaaatgaatgaatggcttggagtgcactgagaacagcatatgatttcttgctttg 2169
                                                                                                                                       721 gggamaaagaatgatgctatgaaattggtggtggtgtgtatttgagaagataatcattgct 780
                                                                                           661 taggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttcttgctttg 720
541 tggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgt 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           the sequences
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Isolated gene locus UGTl, DNA segments and diagnostic probes for diagnosing Gilbert's disease and Crigler-Najjar syndrome types I and II
                                                                                                                                                                                                                                                                                                                                                                                     UGT1A; UGT1BP; UGT1C; UGT1D; UGT1E; UGT1F; isozyme; bilirubin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     represented in AAQ33026 and AAQ33027'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /*tag= a //note= "representation of 3.3 kbp of //note= non-sequenced DNA between the
                                                                                                                                                                                                             2290 gtttactttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                        (USSH ) US DEPT HEALTH & HUMAN SERVICE.
                                                                                                                                                                                                                                                                                                                                                                                                UDP-glucuronosyl transferase; CN; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Fig 11; 99pp; English
                                                                                                                                                                                                                                                                                                                                                               Exon 5 from the UGT1 gene locus.
                                                                                                                                                                                                                                                                                           AAQ33027 standard; DNA; 1667 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /*tag= b
/label= Exon_5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91US-0639453.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92WO-US00282
                                                                                                                                                                                                                                                                                                                                       27-JAN-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 391..1402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   . 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Owens IS, Ritter JK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1992-284593/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          P-PSDB; AAR30166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-JAN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9212987-A.
                                                                                                                                                                                                                                                                                                                  AAQ33027;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   exon
                                           පු
                                                                   ò
                                                                                        g
                                                                                                                ò
                                                                                                                                      g
                                                                                                                                                              õ
                                                                                                                                                                                   셤
                                                                                                                                                                                                           ò
```

```
1471 tccttggacgtgattggtttcctcttggccgtcgtgct-gacagtggccttcatcacctt 1529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1590 ccacaaatccaagacccattgagaagtgggtgggaaataaggtaaaattttgaaccattc 1649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1650 cctagtcatttccaaacttgaaaacagaatcagtgttaaattcattttattcttattaag 1709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1770 ataatagactcgctagtcagtcagtaaagatatttgaatatgtatcgtgcccctccggtgtct 1829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1830 ttgatcaggatgacatgtgccatttttcagaggacgtgcagacaggctggcattctagat 1889
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1890 tactttcttactctgaaacatggcctgtttgggagtgcgggttcaaaggtggtcccac 1949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             627 cctagtcatttcc-aacttgaaaacagaatcagtgttaaattcattttattcttattaag 685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        744 ataatagactcgctagtcagtaaagatatttgaatatgtatcgtgcccctctggtctct 803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         863 tacttttcttactctgaaacatggcctgtttgggagtgcgggattcaaaggtggtcccac 922
                                                                                                                                                                                                                                                                                                                                                                             Indels 103; Gaps
                                                                                                                                                                           the six different first exons and identical C-termini of 246 amino acids are encoded by the common exons 2-5. The UGT1 gene locus encodes a family of UDF-glucuronosyl transferase isozymes, two of which metabolise bilirubin.
          The isolated gene locus, UGTL, has a sequence of about 10000 by which represent (1) Exon 1, comprising 6 transcriptional units
                                                                                                                                                                                                                                                                                                                                            Length 1667;
                                                                                                                                                                                                                                              Patients having Crigler-Najjar Syndrome (CN) Type I, have a mutation present in the second common exon.
                                                                         (2) Exon 2, represented in AAQ33025;
(3) Exon 3, represented in AAQ33026;
(4) Exon 4, represented in AAQ33026;
(5) Exon 5, represented in AAQ33027; and
(6) about 69 kb of non-sequenced DNA.
Six unique N-termini of 286-289 amino acids are encoded by
                            which represent (1) Exon 1, comprising 6 transcriptiona (UGT1F, E, D, C, BP and A), represented in AAQ27368 and
                                                                                                                                                                                                                                                                                                Sequence 1667 BP; 487 A; 316 C; 370 G; 474 T; 20 other;
                                                                                                                                                                                                                                                                                                                                           34.4%; Score 798; DB 13;
89.1%; Pred. No. 3.4e-216;
tive 0; Mismatches 20;
                                                         AAQ33020-24 respectively;
                                                                                                                                                                                                                                                                                                                                                                             Matches 1003; Conservative
                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
```

6

```
Human, biallelic marker; single nucleotide polymorphism; SNP; MGSTII; microsomal glutathione S-transferase II; malate decarboxylase enzyme; DMEI; MEI; cytochrome PAGS; glutathione reductase; GSHR; GGHS; GGT5; flavin-containing monooxygenase; FMO; gamma-glutamyltransferase 5; dipeptidase; DP; glucose 6-phosphate dehydrogenase; GGPB; haptotype; phosphoqueonate dehydrogenase; PGPB; haptotype; uridine diphosphate glucoronosyl transferase; UGT2; asthma; hepatoxicity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human UGT1A7 related DNA containing a biallelic polymorphism SEQ ID 295.
                                                                                                               1982 ttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctc 2041
                                                                                                                                                                             1042 atctctgtcttgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacct 2101
                                                                                                                                                                                                                                                                                                         1922 ggagtgcgggattcaaaggtggtcccaccgctgccctactgcaaatggcagtttaatc 1981
                                                                                                                                                                                                                                            2102 ttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttc 2161
                                                                                                                                                                                                                                                                                                                                                                       2222 tcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtg 2281
                                                                  661 ttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctc 720
                                                                                                                                                                                                         721 atctctgtcctgcttcataggtgccaccttgtgtgttttaaagaagggaagctttgtacct 780
                                                                                                                                                                                                                                                                         781 ttagagtgtaggtgaaatgaatgaatggatggcttggagtgcactgagaacagcatatgatttc 840
                                                                                                                                                                                                                                                                                                                                        541 gacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttg 600
2282 ctgggcaagtttacttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961 ctgggcaagtttacttttttctgatgtttcctacaact 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAH51404 standard; DNA; 1001 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24-MAR-2000; 2000WO-IB00403.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0126269.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0131961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29-AUG-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WO200058508-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (GEST ) GENSET.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            zileuton; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        05-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAH51404;
                                                                                                               δ
                                                                                                                                                                                                           g
                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                              g
                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                   P
```

Polynucleotides comprising sequences from malate decarboxylase

enzyme-related biallelic markers used for genotyping

Claim 13; Page 487-488; 673pp; English.

Blumenfeld M, Bougueleret L, Chumakov I, Cohen-Akenine A;

WPI; 2000-638353/61.

```
Sequences AAH51110-AAH51593 represent human DNA fragments which contain CC biallelic markers. The sequences are related to various human genes including microsomal glutarhinone S-transferase II (MCSTII), malate decarboxylase enzyme (DMEJ/MEI), cytochrome P450, glutarhinone microsomal glutarhinone P450, glutathinone contains a microsomal plutarhinone as a (GSHR/GSHS) flavin-containing monoxygenase (FMO), glucase (PCDH), phosphate glucoronese (GGTS), dipeptidase (DP), glucose 6-phosphate glucoronosyl transferases (UGT2). Each of these sequences contains a biallelic marker/polymorphism, which is represented in the sequence as a degenerate/udefined base. The genes to which the biallelic marker containing sequences are related are involved in drug metabolism. Sequences AAH51594 - AAH51598 represent the genes: containing the CS sequences and four alternative MGSTII cDNA sequences. AAH62005-AAB62005 are used in marker containing the products. PCR primers AAH51599 and AAH51600 are used in example for the amplification of human genomic bNA fragments. The clonention includes a method of genotyping comprising determining the clonention of an allele of a DME- or MGSTII related biallelic marker in containing the includes a method is used to determine the frequency in the polynoidual for inclusion in a clinical trial of a drug completion of an allele of a DME- or MGSTII related biallelic marker and phenotype, and to detect association between allele contained and phenotype. The polynoidual suffers or is at risk of developing or at the polynoidual suffers or is at risk of developing contained whether an individual suffers or is at risk of developing assays.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1690 ttcattttattcttattaaggaaatactttgcataaattaatcagccccagagtgcttta 1749
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1990 tggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgt 2049
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1450 ctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctg 1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1510 acagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaa 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1570 aaagggcgagttaagaaagcccacaaatccaagacccattgagaagtggggaaataa 1629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1630 ggtaaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgttaaa 1689
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1750 aaaaattetettaaataaaaataatagtaaetegetagteagtaaagatatttgaatatgta 1809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1810 tcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggacgtgca 1869
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1870 gacaggctggcattctagattactttcttactctgaaacatggcctgtttggggagtgcg 1929
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1930 ggattcaaaggtggtcccaccgctgccctactgcaaatggcagttttaatcttatctt 1989
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 ttcattttattcttattaaggaaatactttgcataaattaatcagccccagagtgcttta 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 aaaaattetettaaataaaaataatagaetegetagteagtaaagatatttgaatatgta 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361 tcgtgccccctccggtgtctttgatcaggatgacatgtgccatttttcagaggacgtgca 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 gacaggotggcattctagattacttttcttactctgaaacatggcctgtttgggagtgcg 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    asthma or is at risk of developing hepatoxicity on treatment with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        37.5%; Score 870.6; DB 21; Length 1001; 99.9%; Pred. No. 5.6e-237; Live 1; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1001 BP; 293 A; 171 C; 210 G; 326 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches 870; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                업
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
flavin-containing monooxygense; FMO; gamma-glutamyltransferase 5; dipeptidase; DP; glucose 6-phosphate dehydrogenase; G6DH; haplotype; phosphogluconate dehydrogenase; PGDH; drug metabolism; phenotype; uridine diphosphate glucoronosyl transferase; UGT2; astima; hepatoxicity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human UGT1A7 related DNA containing a biallelic polymorphism SEQ ID 294.
                                                                                                                 15167 acttitcttactctgaaacatggcctgtttgggagtgcgggattcaaaggtggtcccacg 15226
                                                                            15407 tiggagigcacigagaacagcataigatitetigetitiggggaaaaagaatgatgetaig 15466
                                                                                                                                                                                                                                                                                                                             15467 aaattggtggtggtgtatttgagaagataatcattgcttatgtcaaatggagctgaatt 15526
                                                                                                                                                                                                                                                                                                                                                                          1891 actitictiacicigaaacatggccigittiggagigcgcggaticaaaggiggicccac 1950
                                                           1951 gctgccctactgcaaatggcagttttaatctttttggcttctgcagatggttgca 2010
                                                                                                                                                                             2131 ttggagtgcactgagaacagcatatgatttcttgctttggggaaaaagaatgatgctatg 2190
                                                                                                                                                                                                                                                                                                 2191 aaattggtggtggtgttttgagaagataatcattgcttatgtcaaatggagctgaatt 2250
                                                                                                                                                                                                                                                                                                                                                               microsomal glutathione S-transferase II; malate decarboxylase enzyme;
DMEL; ME1; cytochrome P450; glutathione reductase; GSHR; GSHS; GGT5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Human; biallelic marker; single nucleotide polymorphism; SNP; MGSTII;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Polynucleotides comprising sequences from malate decarboxylase enzyme-related biallelic markers used for genotyping \cdot
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Blumenfeld M, Bougueleret L, Chumakov I, Cohen-Akenine A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 13; Page 487; 673pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAH51403 standard; DNA; 1001 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         24-MAR-2000; 2000WO-IB00403.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0126269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      99US-0131961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  29-AUG-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                 15587 tectacaact 15596
                                                                                                                                                                                                                                                                                                                                                                                                                      2311 tectacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-638353/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200058508-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GEST ) GENSET.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             05-0CT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH51403;
                                                                                                                                                                                                                                                                                                                                                             2251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAH51403
                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       8
                                                                                                                                              셤
                                                                                                                                                                           ò
                                                                                                                                                                                                     g
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                       a
```

```
Sequences AAH51110-AAH51593 represent human DNA fragments which contain contain markers. The sequences are related to various human genes including microsomal glutathione S-transferase II (MGSTII), malate decarboxylase enzyme (DMEI/MEI), cytochrome P450, glutathione reductase/synthase (GSHE/MEI), cytochrome P450, glutathione reductase/synthase (GSHE/GSHS), flavin-containing monoxygenases (FWO), gamma-glutamyltransferase (GGTS), dipeptidase (DP), glucose 6-phosphate dehydrogenase (GBPBH), phosphogluconate dehydrogenase (GBPBH), and uridine dehydrogenase (GBPBH), phosphogluconate dehydrogenase (GBPBH), and uridine contains a biallelic marker/polymorphism, which is represented in the sequence as a degenerate/nuclefined base. The genes to which the biallelic marker containing sequences are related are involved in drug metabolism. Sequences AAH51594 - AAH51598 represent the genomic sequence of the MGSTII gene and four alternative MGSTII coha sequences. AAH51599 - AAH51600 are used in an example for the amplification of human genomic DNA fragments. The invention includes a method of genotyphing comprising determining the invention includes a method of genotyphing comprising determining the abiliation of an allele of a DNE- or MGSTII related biallelic marker and the method is used to determine the frequency in the contained and the sequence of the propulation of an allele of a DNE- or MGSTII related biallelic marker and the contained and substance and contained the contained the drugs.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              treatment. The method is also used to detect association between allele and phenotype, and to detect association between haplotype and phenotype. The polynuclectides are used, in hybridization assays, sequencing assays or allele specific amplification assays. The method can be used to determine whether an individual suffers or is at risk of developing asthma or is at risk of developing hepatoxicity on treatment with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1322 agaacatcatgcgcctctccagccttcacaaggaccgccggtggagccggctggacctgg 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1382 ccgtgttctgggtggagtttgtgtgatgagcacaagggcgcgccacacctgcgccccgcag 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1442 cccacgacctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccg 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1562 tggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggtg 1621
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1622 ggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatca 1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1682 gtgttaaattcattttattcttattaaggaaatactttgcataaattaatcagccccaga 1741
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1742 gtgctttaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttg 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1802 aatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagag 1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 ccgtgttctgggtggagtttgtgatgaggcacaagggcgcgccacacctgcgcccgcag 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    241 tggggaaaaaagggcgagttaagaaagcccacaaaatccaagacccattgagaagtgggtg 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 gtgctttaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttg 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   121 cccacgacctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 ggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatca 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 361 gigtiaaatteattittattettattaaggaaataettigeataaattaateageeeeaga 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 agaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctgg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 21; Length 1001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 1001 BP; 269 A; 205 C; 233 G; 293 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       h 43.0%; Score 998.6; DB 21 Similarity 99.9%; Pred. No. 2.1e-273; 98; Conservative 1; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local
×85666666666666666666666666666666668888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
```

1862 gacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttg 1921

á

481 aatatgtatcgtgcccctcyggtgtctttgatcaggatgacatgtgccatttttcagag 540

```
Genotyping a human UDP glycosyltransferase 1 gene of an individual for determining the haplotype of an individual, involves determining the identity of a nucleotide pair at specific polymorphic sites for two
                                                                                                                                                                              /note= "This CDS is specifically claimed in claim
                                                                           /standard_name~ "Single nucleotide polymorphism"
2616..14887
                                                                                                                                                                                                                                                                                                                                                                                                                                           /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /standard_name= "Single nucleotide polymorphism" replace (14971,C)
                                                                                                                                                                                                                                                                                      /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                               /standard_name= "Single nucleotide polymorphism"
replace (3155,G)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /standard_name= "Single nucleotide polymorphism"
replace (14776,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /standard_name= "Single nucleotide polymorphism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /standard_name- "Single nucleotide polymorphism
                                                                                                                                                    'product= "UDP glycosyltransferase 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Chew A, Choi JY, Koshy B, Rounds E;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          replace (10094,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  replace (10140,C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 replace (10091,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 replace (14423,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       replace (14713,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         replace (10095,C)
                                                                                                                                                                                                                                                                                                            replace (2826,A)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         replace (9508,C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     replace (9511,T)
                            replace (2510,C)
                                                                                                                                                                                                                                      replace (2756,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (GENA-) GENAISSANCE PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18-APR-2000; 2000US-197514P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                L3-APR-2001; 2001WO-US12273.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2002-075063/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; AAU10940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              W0200179230-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25-OCT-2001.
                         variation
                                                                                                                                                                                                                                      variation
                                                                                                                                                                                                                                                                                                                  variation
                                                                                                                                                                                                                                                                                                                                                                                              variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       variation
                                                                                                     CDS
```

The invention relates to genotyping a human UDP glycosyltransferase

Claim 21; Fig 1; 81pp; English.

```
(UGTIAI) gene of an individual, involving determining for the two copies of the UGTIAI gene present in the individual, the identity of the nucleotide pair at one or more polymorphic sites. The new method is useful for determining whether an individual has a haplotype or haplotype pairs, given in the specification. It is useful for improving the efficacy and reliability of several steps in the discovery and development of drugs for treating diseases associated with UGTIAI activity, e.g., Gilbert's syndrome and Crigler-Najjar syndrome, to validate UGTIAI as a candidate agent for treating a specific condition or disease predicted to be associated with UGTIAI activity, and in the design of clinical trials of candidate drugs for treating a specific condition or disease predicted to be associated with UGTIAI activity, and in the condition or disease predicted to be associated with UGTIAI activity. The
                                                                                                                                                                                                                                                                                                                                                      method is useful to screen for compounds targeting UGTIA1 to treat a specific condition or disease associated with UGTIA1 activity. A nucleic acid (I) comprising a polymorphic variant of a reference sequence for the UGTIA1 gene or CDNA (II) or its fragment is useful in studying the expression and function of UGTIA1, and in expressing UGTIA1 protein for use in screening for candidate drugs to treat diseases related to UGTIA1 eccombinant organism comprising (II) is useful for studying a recombinant organism comprising (II) is useful for studying expression of the UGTIA1 isogenes in vivo, for in vivo screening and testing of drugs targeted against UGTIA1 protein, and for testing the efficacy of therapeutic agents and compounds for dibert's syndrome and crighter Najjar syndrome, in a biological system. The present sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14567 aacgaaactgtctttgtgtttagttacaaggagaacatcatgcgcctctccagccttcac 14626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14687 cacaagggcgcgccacacctgcgccccgcagcccacgacctcacctggtaccagtaccat 14746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14747 tccttggacgtgattggtttcctcttggccgtcgtgctgacagtggccttcatcaccttt 14806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                14927 ctagtcatttccaaacttgaaaacagaatcagtgttaaattcattttattcttattaagg 14986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15047 taatagactcgctagtcagtaaagatatttgaatatgtatcgtgccccctctggtgtctt 15106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1291 aaagcagtcatcaatgacaaaagttacaaggagaacatcatgcgcctctccagccttcac 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1351 aaggaccgcccggtggagccgctggacctggccgtgttctgggtggagtttgtgatgagg 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1471 tccttggacgtgattggtttcctcttggccgtcgtgctgacagtggccttcatcaccctt 1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1591 cacaaatccaagacccattgagaagtgggtgggaaataaggtaaaattttgaaccattcc 1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ctagtcatttccaaacttgaaaacagaatcagtgttaaattcattttattcttattaagg 1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1771 taatagactcgctagtcagtaaagatatttgaatatgtatcgtgcccctccggtgtctt 1830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1411 cacaagggcgcgccacacctgcgccccgcagcccacgacctcacctggtaccagtaccat 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            43.3%; Score 1004.4; DB 24; Length 18887; 98.4%; Pred. No. 2.8e-274; tive 0; Mismatches 16; Indels 0; G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    represents the coding sequence of UDP glycosyltransferase 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 18887 BP; 5079 A; 4037 C; 4131 G; 5640 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches 1014; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
         888888888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 рp
```

to restore normal activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or quantitating a polypeptide in tissue, as molecular weight markers and as a food supplement. (II) and its binding partners are useful in medical maying of sites expressing (II). (I) and (II) are useful in medical clisorders involving aberrant protein expression or biological activity. The polypeptide and polynuclectide sequences have applications in the polypeptide and polynuclectide sequences have applications in carponsible for genetic disorders or other traits to assess biodiversity and to produce other types of data and products dependent on DNA and canno acid sequences. Assolighy-Assols for persent novel human clisory account of the invention.

Note: The sequence data for this patent did not appear in the printed control of the invention. ftp.wipo.int/pub/published_pct_sequences.

Sequence 1655 BP; 402 A; 388 C; 403 G; 462 T; 0 other;

ö 45 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 104 61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgccatggat 120 121 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcaggggggatgag 180 165 999agccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 224 181 gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg 240 225 giggitigiagicaigccagaggigagitiggcaacigggaagaicacigaatigcacagig 284 301 catgotcaatggaaagcacaagtacgaagtatatattototattaatgggttcatacaat 360 421 gaatacitaaaggagagttcitttgatgcagtgtttctcgatccitttgataactgtggc 480 481 ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 540 541 cactatcttgaagaaggtgcacagtgccctgctcctttcctatgtcccagaattctc 600 105 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 164 345 catgotcaatggaaagcacaagtacgaagtttgttttctctatttctgagttcatccaat 404 585 cactatcttgaagaaggtgcacagtgccctgctcctctttcctatgtccccagaattctc 644 661 gaggaacatttattatgccaccgtttttcaaaaatgccctagaaatagcctctgaaatt 720 705 gaggaacatttattttgccagtattttccaaaaatgccctagaaatagcctctgaaatt 764 ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgtgcga 780 0; Gaps 1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60 y Match 66.9%; Score 1551.8; DB 23; Length 1655; Local Similarity 97.7%; Pred. No. 0; hes 1574; Conservative 0; Mismatches 37; Indels 0; C TRIBUNITA OT THÍUNDUMINUM MANDEN A THE THEORY Matches 1574; Conservative Query Match ð g å a ò 유 á 엄 ద ò g d q ద á à ò ò g ò a ò à

1021 actggaacccgaccatcgaatcttgcgaacaacaacagatacttgttaagtggctaccccaa 1080 1201 atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 1260 961 aaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtgggggtac 1020 1081 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1140 1185 gittatgaaagcatatgcaatggcgttcccatggtgatgatgccttgtttggtgatcag 1244 gagaacatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctg 1380 1065 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaa 1124 1141 gtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcag 1200 1245 atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 1304 1261 atgacttcigaagatttagaaaatgctctaaaagcagtcatcaatgacaaaggtacaag 1320 1365 gagaacatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctg 1424 1381 gccgtgttctggggtggagtttgtgatgaggcacaagggcgccacacctgcgccccgca 1440 1441 goccacgarctcacctggtaccagtaccattccttggacgtgattggtttcctcttggcc 1500 1501 gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc 1560 781 acggactttgttttggactatcccaaaccgtgatgcccaacatgatcttcattggtggt 840 945 ggagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaag 1004 1425 gccgtgttctgggtggagtttgtgatgaggcacaagggcgccacacctgcgccccgca 1484 1485 gcccacgacctcacctggtaccagtaccattccttggacgtgattggttcctcttggcc 1544 1545 gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc 1604 841 atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900 901 ggagaacatggaattgtgggttttctctttgggatcaatggtctcagaaattccagagaag 960 765 ctccaaacacctgtcacagcatatgatctctacagccacacatcaatttggttgttgcga 824 885 atcaactgccatcagggaaagccattgcctatggaatttgaagcctacattaatgcttct 944 1561 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattga 1611 g g ò à g ò g á ŏ a g 셤 g a g ŏ à g ò ò à δ g ò

drug discovery; Gilbert's syndrome; Crigler-Najjar syndrome; ds. UDP 91ycosyltransferase 1; UGT1A1; human; haplotyping; DNA encoding UDP glycosyltransferase 1 (UGT1A1). AAS18543 standard; DNA; 18887 BP 12-MAR-2002 (first entry) Homo sapiens AAS18543; AAS18543 RESULT

à	858	aag -
3 8	· -	gargecaccacctacygaarcccygaagecaccacacagecaccaccygagagaacacyc atttctctttaaaatcaatacaccacaaatatccaaaattccaaaaaa
i	4	. 0
o a	978	tgatgetttgggcaaaateeeteagaeagteetgtggeggtaeaetggaaeeegaeeate 1037
Qy Db	1038	aatcttgcgaacaacacgatacttgttaagtggctaccccaaaacgatctgcttggtca 1
Qy Dp	1098	atcacccatgct atcacccatgct
Qy Dp	1158	caatggcgttcccatggtgatgatgccttgtttggtgatcagatgacaatgcaaagcg 1217
Oy Op	1218 1241	catggagactaagggagctggagtgacctgaatgttctggaaatgacttctgaagattt 1277
oy Op	1278 1301	agaaaatgototaaaagcagtoatoaatgacaaagttacaaggagaacatoatgogoct 1337
oy d	1338	ctccagccttcacaaggaccgccggtggagccgctggacctggccgtgttctgggtgga 1397
⁶ 성	1398	gtttytgatgaggcacaagggcgccacacctgcgccccgcagcccacgacctcacctg 1457
O _y	1458	gtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctgacagtggc 1517
Qy	1518	cttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaaagggcg 1577
Qy Db	1578 1601	agttaagaaagcccacaaatcccagacccattgagaagtgggtgg
Q P	1638 1661	tttgaaccattccctagtcatttccaaacttgaaacagaatcagtgttaaattcatttt 1697
8 S	1698	actttgcataaattaatcagcc
oy G	1758	ataatagactcgctagtcagtaaagatatttgaa
Oy Op	1818	gatcaggatgacatgtgccatttttcagaggacgtgcagac
Oy Dp	87	cattctagattacttttcttactctgaacatggcctgtttgggagtgcggattcaa 193

```
The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and apping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques
1998 gcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgtcctgcttc 2057
                                                                             2020 gcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgtcctgcttc 2079
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DNA encoding novel human diagnostic protein #27056.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 1; SEQ ID No 27056; 103pp; English.
                                                                                                                                                                                                                                                                                                                      2297 ttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                    2320 ttttttctqatqtttcctacaact 2343
                                                                                                                                                                                                                                                                                                                                                                                                              AAS91252 standard; cDNA; 1655 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 31-MAR-2000; 2000US-0540217.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             23-AUG-2000; 2000US-0649167
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-FEB-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 2001-639362/73.
P-PSDB; ABG27065.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-OCT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                         AAS91252;
                                                                                                                                                                                                                                                                                           쉽
                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                               셤
                                                                                                          õ
                                                                                                                                g
                                                                                                                                                             οy
                                                                                                                                                                                      g
                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                    δy
```

```
2164 gctttggggaaaaagaatgatgctatgaaattggtggtggtggtgtttgagaagataatc 2223
                                                                                                                                                                                                                                                  2224 attgrttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgct 2283
                                                                                                                                                                                                                                                             1870 gtgc:gacaggctggcattctagattacttttcttactctgaaacatggcctgtttggga 1929
                                                                                                                                                         2104 agagigtaggtgaatgaatgaatggcttggagtgcactgagaacagcatatgatttctt 2163
                                                                                                                                                                               2110 agaq:gtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttctt 2169
                                                                                                                                                                                                                            2170 gctt:ggggaaaaagaatgatgctatgaaattggtgggtggtgttgtttgagaagataatc 2229
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Isolated gene locus UGT1, DNA segments and diagnostic probes for diagnosing Gilbert's disease and Crigler-Najjar syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bilirubin: UDP-glucuronosyltransferase; HUGBr1; HUGBr2;
                                                                                                                                                                                                                                                                                               2284 gggcaagtttactttttttttgtgtgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                  2290 gggcaagtttacttttttctgatgtttcctacaact 2326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (USSH ) US DEPT HEALTH & HUMAN SERVICE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 monoglucuronide; diglucuronide; ss.
                                                                                                                                                                                                                                                                                                                                                                          AAQ27370 standard; cDNA; 2368 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91us-0639453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       92WO-US00282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /number= 1
2355..2360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /*tag= a
2347..2352
                                                                                                                                                                                                                                                                                                                                                                                                                       27-JAN-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /number= 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Owens IS, Ritter JK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1992-284593/34.
P-PSDB; AAR26154.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10-JAN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9212987 · A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-AUG-1992.
                                                                                                                                                                                                                                                                                                                                                                                                  AAQ27370;
                                                                                                                                                                                                                                                                                                                                                                                                                                               HUG-Br2.
                                          g
                                                                                                            à
                                                                                                                                                        ö
                                                                                                                                                                              임
                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                             à
```

```
been isolated. They are referred to as HUGBII (AAQ27369) and HUGBr2 (AAQ27370) (Ritter, et al., J. Bloll. Chem. 266:1046-1047 (1991)) and, upon expression individually in COS-1 cells, encode isoforms that catalyse the formation of the two bilirubin monoglucuronides and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         341 acatcttctgaagagatattctagaagtatggcaattatgaacaatgtatctttggccct 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          581 cacacagigiccaaaiccitccicciataitcciaagitactaacgaccaaitcagacca 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      641 catgacattcctgcaaagggtcaagaacatgctctaccctctggccctgtcctacatttg 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             761 tgtccaggacctattgagctctgcatctgtctggctgtttagaagtgactttgtgaagga 820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  101 ctgggctgagagtggaaaggtgttggtggtgcccactgatggcagcccctggctcagcat 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        141 gaggtcggtggtggagaaactcattctcaggggggcatgaggtggttgtagtcatgccaga 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        161 gcgggaggccttgcgggagctccatgccagaggccaccaggcggtggtcctcacccaag 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201 ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       221 aggtgaatatgcacatcaagaagagaaattttcaccctgacagcctatgctgttccatg 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             261 taccetggaggatetggacegggagttcaaggettttgeceatgeteaat---ggaaage 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                281 gacccagaaggaatttgatcgcgttacgctgggctacactcaagggttctttgaaacaga 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      318 acaagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     378 tttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagag 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        401 tcataggtgttgtgtggagctactgcataatgaggccctgatcaggcacctgaatgctac 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               438 ttettttgatgeagtgtttetegateettttgataaetgtggettaattgttgeeaaata 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     461 tteetttgatgtggttttaacagaeeeegttaaeetetgeggggggggtgetggetaagta 520
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           498 tttctccctccctccgtggtcttcgccaggggaatactttgccactatcttgaagaagg 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 521 cetgicgaitccigcigittittitiggaggiacaitccaigigactiagactitaaggg 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    558 tgcacagtgccctgctcctcttcctatgtccccagaattctcttagggttctcagatgc 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                618 catgactttcaaggaggagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            678 ccaccgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        738 ggagtatgatetetacagecacacateaatttggttgttgegaaeggaetttgttttgga 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    798 ctatcccaaacccgtgatgcccaacatgatcttcattggtggtatcaactgccatcaggg 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5; Gaps
                                                                                                         Two human liver bilirubin UDP-glucuronosyltransferase cDNAs have
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          68.0%; Score 1576.8; DB 13; Length 2368; 82.3%; Pred. No. 0;
                                                                                                                                                                                                                                                                        The CDNAs contain identical 3' ends (1469 bp in length) to each other and to that of the human phenol transferase CDNA, HLUGP1 (Harding et al., Proc. Natl. Aca. Sci. USA 85:8281 (1988)). In contrast, they have unique 5' ends.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 0;
0; Mismatches 392; Indels
                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 2368 BP; 609 A; 532 C; 566 G; 661 T; 0 other;
                                                      Disclosure; Fig 9A-I; 99pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 1847; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Similarity
                                                                                                                                                                                                                                             the diglucuronide.
types I and II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

isolated gene locus UGT1, DNA segments and diagnostic probes for diagnossing Gilbert's disease and Crigler-Najjar syndrome types I and II

Disclosure; Fig 9A-I; 99pp; English.

Two human liver bilirubin UDP-glucuronosyltransferase cDNAs have been isolated. They are referred to as HUGBLI (AAQ27369) and HUGBL2 (AAQ27370) (Ritter, et al., J. Biol. Chem. 266:1043-1047 (1991)) and, upon expression individually in COS-1 cells, encode isoforms that catalyse the formation of the two bilirubin monoglucuronides and the diglucuronide.

The CDNAs contain identical 3' ends (1469 bp in length) to each other and to that of the human phenol transferase cDNA, HLUGPI (Harding et al., Proc. Natl. Aca. Sci. USA 85:8281 (1988)). In contrast, they have unique 5' ends.
Sequence 2351 BP; 602 A; 540 C; 556 G; 653 T; 0 other;

128 actggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgaggtggttg 187 131 actggctgagcatgcttggggccatccagcagctgcagcagaggggacatgaaatagttg 190 191 tectageacetgaegeetegttgtacateagagaeggageattttaeaceettgaagaegt 250 251 accctgtgccattccaaagggaggatgtgaaagagtcttttgttagtctcgggcataatg 310 311 tttttgagaatgattetteetteetgeagegtgtgateaaaacatacaagaaaataaaaaagg 370 371 actetgetatgettttgtetggetgtteecaettaetgeacaacaagageteatggeet 430 188 tagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247 248 attcaacttcatataccctggaggatctggaccgggagtt--caaggcttttgcccatgc 305 306 tcaatggaaagcacaagtacgaagtatattettctettaatgggttcatacaatgacat 365 366 ttttgact-tatttttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaat 424 425 acttaaaggagagttctttgatgcagtgtttctcgatccttttgataactgtggcttaa 484 485 ttgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgccact 544 545 atcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctcttag 604 605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664 611 ctcattcagatcacatgaccttcctgcagcgggtgaagaacatgctcattgcctttcac 670 665 aacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724 671 agaactttctgtgcgacgtggtttattccccgtatgcaacccttgcctcagaattccttc 730 725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784 5; Gaps 68.2%; Score 1581.4; DB 13; Length 2351; 82.5%; Pred. No. 0; 0; Mismatches 391; Indels Matches 1861; Conservative Local Similarity Query Match δ g à qq ŏ 셤 ŏ ò 셤 g à g ŏ 셤 ŏ ద ò 셤 ò 셤 ŏ

785 actttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggtatca 844

1865 gtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttggga 1924 971 ctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactg 1030 1211 acaatgcaaagcgcatggagactaagggagctggagtgaccttgaatgttctggaaatga 1270 1271 cttctgaagatttagaaaatgctcaaaaagcagtcatcaatgacaaaagttacaaggaga 1330 tgttetgggtggagtttgtgatgaggcacaagggcgccacacetgcgccccgcagcc 1444 1391 tgttctgggtggagtttgtgatgaggcacaagggcgcgccacacctgcgccccgcagccc 1450 965 ctatggcaattgctgatgctttgggcaaaatcctcagacagtcctgtggcggtacactg 1024 1025 gaacccgaccatcgaatcttgcgaacaacaacgatacttgttaagtggctaccccaaaacg 1084 1085 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 1144 1205 acaatgcaaagcgcatggagactaagggag'ctggagtgacctgaatgttctggaaatga 1264 cttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaggtacaaggaga 1324 1325 acatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctggccg 1384 1331 acatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctggccg 1390 1445 acgaecteacetggtaceagtaceatteettggaegtgattggttteetettggeegteg 1504 1505 tgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1564 1625 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1684 1631 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1690 1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtg 1744 1745 ctttaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttgaat 1804 1750 ctttaaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttgaat 1809 1805 atgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggac 1864 1810 atgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggac 1869 851 actgeetteaceaaaateeactateeeaggaatttgaageetaeattaatgettetggag 910 911 aacatggaattgtggttttctctttggaatcaatggtctcagaaattccagagaaag 970 791 actttgtgaaggattaccctaggcccatcatgcccaatatggtttttgttggtggaatca 850 845 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 904 905 aacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaagaag 964 1385 δ q οχ g δ g δ qq qq ò à q q ò δ q q δλ δ qq g δ g g δ g qq ò ò g ð g δ g ŏ

840	006	096	1020	1080	1140	1200	1260	1320	1380	1440	1500	1560	1620	1680	1740	1800	1860 1860
acggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtgtgt 	atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 	1 ggagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaag 	1 aaagstatggsaattgstgstgstttgggsaaatsssteggasagtsstgtggsggtas 	a actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaa 	aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatgt	1 gittaigaaagcataigcaaigggitcccaiggigaigaigaigccitgitiggigaicag 	l atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 	atgactictgaagatitagaaaatgcictaaaagcagicatcaatgacaaaagtiacaag 	gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg 	1 gccgtgttctgggtggagtttgtgatgaggcacaagggcgcgccacacctgcgcccgca 	gcccacgactcacctggtaccagtaccattccttggacgtgattggtttcctcttggcc	gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc 	. ttggggaaaaaagggggagttaagaaagcccacaaatccaagacccattgagaagtgggt 	. gggalataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 	. aqtgitaaattcattttattcttattaaggaaatactttgcataaattaatcagccccag 	. agtgotttaaaaaattotottaaataaaaataatagaotogotagtoagtaaagatattt 	gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgcatt
781	841	901	961	1021	1081	1141	1201	1261	1321	1381	1441	1501	1561	1621	1681	1741	1801 180 1
Oy Dp	Q _y	oy Oy	Oy Op	Oy Dp	Qy Dp	oy Oy	Oy Dp	g 9	Oy Dp	Oy Db	g ç	Qy Dp	oy Dp	Oy Dp	Oy Dp	Qy Dp	Oy Db

```
2101 tttagagtçtaggtgaaatgaatggatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                           2101 tttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                      2161 cttgctttggggaaaaagaatgatgctatgaaattggtggtggtggtgttttgagaagata 2220
                                                                                                                                                                                                                                                                                                      Bilirubin; UDP-glucuronosyltransferase; HUGBrl; HUGBr2;
                                                                                                                                                                                                (USSH ) US DEPT HEALTH & HUMAN SERVICE.
                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                              monoglucuronide; diglucuronide; ss.
                                                                                                                                                                                                                                                 AAQ27369 standard; cDNA; 2351 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                       910S-0639453
                                                                                                                                                                                                                                                                                                                                                                                                                                         92WO-US00282
                                                                                                                                                                                                                                                                                                                                                                                         /*tag= c
/number= 2
                                                                                                                                                                                                                                                                           27-JAN-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                       /*tag= a
2330..2335
                                                                                                                                                                                                                                                                                                                                                                                  2338..2343
                                                                                                                                                                                                                                                                                                                                                                      /*tag= b
                                                                                                                                                                                                                                                                                                                                                                            /number= 1
                                                                                                                                                                                                                                                                                                                                                       /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Owens IS, Ritter JK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1992-284593/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       P-PSDB; AAR26153
                                                                                                                                                                                                                                                                                                                                                                                                                                                       10-JAN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                         10-JAN-1992;
                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                             polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                   polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                             W09212987-A.
                                                                                                                                                                                                                                                                                                                                                                                                                           06-AUG-1992
                                                                                                                                                                                                                                                              AA027369;
                                                                   q
                                                                                 ò
                                                                                                             ŏ
                                                                                                                           g
                                                                                                                                        ò
                                                                                                                                                      8
                                                                                                                                                                                   셤
                                                                                                                                                                                                ö
```

```
1801 gaatatgtatogtgcccctccggtgtctttgatcaggatgacatgtgccatttttcaga 1860
                           1801 gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcaga 1860
                                                       1861 ggacgtgcagacaggctggcattctagattactttcttactctgaaacatggcctgttt 1920
                                                                      1921 gggagtgcgggattcaaaggtggtcccaccgctgcccctactgcaaatggcagttttaat 1980
                                                                                                                            2040
                                                                                                                                                                                     2041 catctctgtcctgcttcataggtgccaccttgtgtgttttaaagaagggaagctttgtacc 2100
                                                                                                                                                                                                                                                       tttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                                                                                                                                                                               2101 tttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                                                                                                                                                                                                            2161 cttgctttggggaaaaaagaatgatgctatgaaattggtggtggtgttgtatttgagaagata 2220
                                                                                                                                                                                                                                                                                                                                                                        2221 atcattgcttatgtcaaatggagctgaatttgataaaaacccaaaaatacagctatgaagt 2280
                                                                                                                                                                                                                                                                                                                                                                                                                              2221 atcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagt 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human, uridine 5'diphosphate glucuronyltransferase enzyme; UGT1A9; flavopiridol; cancer; gastrointestinal disease; parasitic infection;
                                                                                                                                                                      1981 cttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human uridine 5'diphosphate glucuronyltransferase UGT1A9 cDNA #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product= "UGT1A9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ratain MJ, Innocenti F, Iyer L;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABA05199 standard; cDNA; 2320 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      12-APR-2001; 2001WO-US12526.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  21-APR-2000; 2000US-0553829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /*tag≖
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (ARCH-) ARCH DEV CORP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2002-075093/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; ABB04430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cytostatic; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO200180896-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ABA05199;
                                                                                                                                                                                                                                                                                     2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABA05199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                      Ω
                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                             à
                                                                                                                                     g
                                                                                                                                                                    ŏ
                                                                                                                                                                                              셤
                                                                                                                                                                                                                          á
                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
```

```
The present invention relates to a method of reducing the toxicity of flavoprifod) by administration in combination with a second agent that increases conjugative enzyme activity or glucuronosyltransferase activity. This second agent should be capable of inhibiting billiary transport and may be a uridine 5'diphosphate aplucuronyltransferase such as that encoded by the present sequence (designated UGTIA9). The method can be used in the treatment of cancer, gastrointestinal diseases and
Combinations of flavopiridol and an agent that increases conjugative enzyme activity or glucuronosyltransferase activity, with reduced side
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               481 ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601 ttagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttg 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661 gaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaatt 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661 gaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaatt 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721 ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 181 giggitgiagicalgocagaggigagitggcaacigggaagaicacigaattgcacagig 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               301 catgotcaatggaaagcacaagtacgaagtatatattototattaatgggttcatacaat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 catgotcaatggaaagcacaagtacgaagtatatattototattaatgggttcatacaat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                421 gaatacttaaaggagagttettttgatgeagtgtttetegateettttgataactgtgge 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 gaatacttaaaggagagttettttgatgeagtgtttetegateettttgataaetgtgge 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541 cactatcttgaagaaggtgcacagtgccctgctcctctttcctatgtccccagaattctc 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541 cactatcttgaagaaggtgcacagtgccctgctcctctttcctatgtccccagaattctc 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   601 ttagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttg 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc
                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 2320; DB 24; Length 2320; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                        Sequence 2320 BP; 608 A; 495 C; 547 G; 670 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                Claim 81; Page 141-144; 145pp; English.
                                                effects, for treating cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 2320; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
                                                                                                                                                                                                                                                                                                                       parasitic diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ğ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
```

ö

WPI; 2002-075093/10. P-PSDB; ABB04429

enzyme activity or glucuronosyltransferase activity, with reduced side Combinations of flavopiridol and an agent that increases conjugative effects, for treating cancer

Claim 80; Page 137-140; 145pp; English.

increases conjugative enzyme activity or glucuronosyltransferase activity. This second agent should be capable of inhibiting biliary transport and may be a uridine 5'diphosphate glucuronyltransferase such as that encoded by the present sequence (designated UGILA). The method can be used in the treatment of cancer, gastrointestinal diseases and flavopiridol by administration in combination with a second agent that The present invention relates to a method of reducing the toxicity parasitic diseases.

Sequence 2320 BP; 608 A; 495 C; 547 G; 670 T; 0 other;

ô gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg 240 gaatucttaaaggagagttctttgatgcagtgttctcgatccttttgataactgtggc 480 540 61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120 61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120 121 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 180 181 giggitgiagicatgccagaggigagitggcaacigggaagaicacigaattgcacagig 240 241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300 241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300 301 catgotcaatggaaagcacaagtacgaagtatatattetetattaatgggttcatacaat 360 301 catgotcaatggaaagcacaagtacgaagtatatattetetattaatgggtteataeaat 360 421 gaatacttaaaggagagttcttttgatgcagtgtttctcgatccttttgataactgtggc 480 541 cactatettgaagaaggtgeacagtgeeetgeteetettteetatgteeecagaattete 600 ttagggttctcagatgccatgactttcaaggagagagatacggaaccacatcatgcacttg 660 ttagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttg 660 661 gaggwacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaatt 720 Gaps 1 ctcayctgcagttctctgatggcttgcacagggtggaccagcccccttcctctgtgtg 60 1 ctcayctgcagttctctgatggcttgcacagggtggaccagcccccttcctctatgtgtg 60 481 ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 100.0%; Score 2320; DB 24; Length 2320; ö 0; Indels Match
Local S.milarity 100.0%: Pred. No. v, Matches 2320, Conservative Query Match 361 421 601 ò õ g ò 셤 δ g ò g ò g õ g ò g ò ρp δ g õ g ö g

961 aaagctatgycaattgctgatgctttggggcaaaatccctcagacagtcctgtggcggtac 1020 actggaaccsgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaa 1080 1021 actggaaccsgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaa 1080 1081 aacgatetgsttggteaecegatgaeeegtgeetttateaeeeatgetggtteeeatggt 1140 1081 aacgatotg:ttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1140 1141 gtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcag 1200 1141 gtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcag 1200 1201 atggacaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctggaa 1260 1201 atggacaatycaaagcgcatggagactaagggagctggagtgacctgaatgttctggaa 1260 1261 atgacttctyaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaag 1320 gagaacatcatgogoctctccagocttcacaaggacogccoggtggagocgctggacctg 1380 gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg 1380 geogitaticigggiggagitigigatgaggeacaagggegegeecacacetgegeecegea 1440 googtgitcigggiggagittgigatgaggcacaagggcgccacacaccigcgcccgca 1440 1441 goccacgacotcacotggtaccagtaccattccttggacgtgattggtttcctcttggcc 1500 1441 goccacgacotcacotggtaccagtaccattcottggacgtgattggtttcotcttggcc 1500 gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc 1560 1561 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggt 1620 1561 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggt 1620 gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 1680 gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 1680 1681 agtgttaaattcattttattcttattaaggaaatactttgcataaattaatcagcccag 1740 1741 agtgctttaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatattt 1800 1741 agtgetttaaaaaattetettaaataaaaataatagaetegetagteagtaaagatattt 1800 961 aaagctatgycaattgctgatgctttggggcaaaatccctcagacagtcctgtggcggtac 1020 901 ggagaacatggaattgtggttttctcttttgggatcaatggtctcagaaattccagagag 960 721 ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 780 841 atcaactgocatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900 acggactttytttggactatcccaaacccgtgatgcccaacatgatcttcattggtggt acggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggt ggagaacatygaattgtggttttctctttgggatcaatggtctcagaaattccagagaag 1381 1501 1021 g g g g g ò 셤 g g ద ò g 셤 ò ö g á ò g οχ ద ŏ ö ð õ

```
(without alignments)
5836.679 Million cell updates/sec
                                                                                                                                                                                                                                                                               1 ctcagctgcagttctctgat.......ttctgatgtttcctacaact 2320
                                                                                                                                     August 21, 2002, 06:34:42; Search time 682.45 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                               3472872
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                   Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                              1736436 seqs, 858457221 residues
                                                                                   OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                           IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Post-processing: Minimum Match 0% Maximum Match 100%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                             US-09-835-082-1
                                                                                                                                                                                                                                                      Perfect score:
                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                            Sednence:
                                                                                                                                                                                                                                                                                                                                                                                              Searched:
                                                                                                                                       Run on:
```

/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001A.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2001B.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1988.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1989.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1990.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1991.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1992.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1996.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1997.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1998.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1994.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1995.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1999.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA2000.DAT:* /SIDS1/gcgdata/geneseq/genesegn-emb1/NA2002.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1980.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1981.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1982.DAT:* /SIDS1/gcgdata/geneseg/genesegn-emb1/NA1985.DAT:*/SIDS1/gcgdata/geneseg/genesegn-emb1/NA1986.DAT:*/SIDS1/gcgdata/geneseg/genesegn-emb1/NA1987.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1983.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-emb1/NA1984.DAT:* N_Geneseq_032802:* Database :

Listing first 45 summaries

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

Description	Human uridine 5'di	Human uridine 5'd1	HUG-Br1. Homo sap	HUG-Br2. Homo sap	DNA encoding novel	DNA encoding UDP g	Human UGT1A7 relat	Human UGI1A7 relat	Exon 5 from the HG
SUMMARIES		ABA05199	AAQ27369	AAQ27370	AAS91252	AAS18543	AAH51403	AAH51404	AA033027
DB	24	24	13	13	53	24	21	21	13
Length	2320	2320	2351	2368	1655	18887	1001	1001	1667
% Query core Match Length DB 1	100.0	100.0	68.2	0.89	6.99	43.3	43.0	37.5	34.4
Score	2320	2320	1581.4	1576.8	1551.8	1004.4	9866	870.6	798
Result No.	1	7	m	4	S	9	7	80	6

Ratain MJ, Innocenti F, Iyer L;

Ruman UGT1A7 relat UDP-glucuronosyltr UDP-glucuronosyltr UDP-glucuronosyltr UDP-glucuronosyltr UDP-glucuronosyltr UDP-glucuronosyltr	Human lung tumour Human lung tumour- Human lung tumour- Human UGT1A7 relat Human UGT1A7 relat Human UDP-91ucuron DAM encoding novel	Uridine diplospro- Human colon cancer Human UDP-glucuron Human carbohydrate DNA encoding novel DNA encoding novel	Human breast cance Human DNA encoding DNA encoding novel Human colon cancer Human uGTIAN relat DNA encoding novel Rat hepatocyte car Exons 3-4 from the Rat hepatocyte car	
AAA451405 AAZ45116 AAZ45115 AAZ45118 AAZ45117 AAZ45117 AAZ45117			AAA006860 AAA06867 AAA06844 AAC09478 AAH51408 AAA91253 AAA87085 AAA87085 AAA87491	
			1722 22 2974 22 1713 22 1713 22 508 21 1001 21 7025 23 366 21 775 13	
33.2 33.0 31.9 31.7 28.4 24.9	15.7 15.7 15.2 14.9	114.70 114.33 114.33 113.00	2000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
769.6 766.6 741.2 735 659.8 578.8	364.2 364.2 364.2 359 345.2 345.2	333.02 333.02 322.02 322.02 325.03 325.04	322.4 322.4 314.6 302.4 223.2 222.4 222.4 222.4	203 203 203 203 203
10 11 12 13 14 15	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 2 2 2 2 2 4 4 5 4 5 4 5 5 5 5 5 5 5 5		C 41 C 43 C 44 C 44

ALIGNMENTS

```
Human; uridine 5'diphosphate glucuronyltransferase enzyme; UGT1A9; flavopiridol; cancer; gastrointestinal disease; parasitic infection;
                                                                                  Human uridine 5'diphosphate glucuronyltransferase UGT1A9 cDNA #1.
                                                                                                                                                                       Location/Qualifiers
19..1611
                                                                                                                                                                                                      /product= "UGT1A9"
                  ABA05198 standard; cDNA; 2320 BP
                                                                                                                                                                                                                                                                       12-APR-2001; 2001WO-US12526.
                                                                                                                                                                                                                                                                                            21-APR-2000; 2000US-0553829.
                                                             04-MAR-2002 (first entry)
                                                                                                                                                                                               /*tag=
                                                                                                                                                                                                                                                                                                                 (ARCH-) ARCH DEV CORP.
                                                                                                                               cytostatic; ss.
                                                                                                                                                                                                                            WO200180896-A2.
                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                  01-NOV-2001.
                                         ABA05198;
         ABA05198
RESULT
```

```
1129 TGGTACTAATTCGGTTCTGGAAGCCATCACTTTGGCGTGCCAATGATAACATGGCCACT 1188
                                                                                                                                         1188 gtttggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtga 1243
                                                                                                                                                                      MOLECULE TYPE:
                                                                                                                                                                                                                                                               RESULT 15
PCT-US92-00282-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT-US92-00282-37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                           ŏ
APPLICANT: BELENAP, WILLIAM R
TITLE OF INVENTION: DNA SEQUENCES ENCODING SOLANIDINE
TITLE OF INVENTION: UDP-GLUCOSE GLUCOSYLTRANSFERASE AND USE TO REDUCE
TITLE OF INVENTION: GLYCOALKALOIDS IN SOLANACEGUS PLANTS
NUMBER OF SEQUENCES: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1068 giggctaccccaaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgc 1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Db 1069 GTGGGTCCCACAGCTTACGATCATGGAACATTCAGCAACAGGGGGGGTCATGACTCATG 1128
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
1.9%: Score 44.8; DB 2; Length 1607;
Best Local Similarity 53.4%; Pred. No. 0.0072;
Matches 94; Conservative 0; Mismatches 82; Indels 0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS: Friedman, Mendel
AUTHORS: Belknap, William R.
TITLE: Cloning and expression of solanidine
TITLE: UDP-qlucose glucosyltransferase from potato
JOURNAL: The Plant Journal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; RELEVANT RESIDUES IN SEQ ID NO: 1: FROM 1 TO 488 US-08-797-226-1
                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/797,226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LOCATICN: 20..1486
OTHER INFORMATION: /product= "solanidine OTHER INFORMATION: glucosyltransferase" PUBLICATION INFORMATION: AUTHORS: Mochs, Charles P. AUTHORS: Allen, Paul V.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Solanum tuberosum
STRAIN: cv. Lemhi Russet
INDIVIDUAL ISOLATE: SGT1750
DEVELOPMENTAL STAGE: mature, somatic
TISSUE TYPE: tuber
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LIBRARY: lambda gtl1 cDNA library CLONE: SGT 1750
                                                                                                                                                                                                                                                                                                                                                                        PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DOCKET NUMBER: 0011.
TELECOMUNINCATION INFORMATION:
TELEPHONE: (510) 559-5731
TELERAX: (510) 559-5731
INPORMATION FOR EXQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1607 base pairs
TTELENCH. 11008T. 11008T.
                                                                                                                   CORRESPONDENCE ADDRESS:
ADDRESSEE: NANCY J. PARSONS
STREET: 800 BUCHANAN ST.
                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME: PARSONS, NANCY J
REGISTRATION NUMBER: 40,364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOLECULE TYPE: CDNA to mRNA
                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CLASSIFICATION: 536
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE:
                                                                                                                                                                                                                                                  USA
                                                                                                                                                                                              ALBANY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  잁
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                    34710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HY POTHETICAL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1997
```

```
Sequence 37, Application PC/TUS9200282
GENERAL INFORMATION:
APPLICANT: OWENS, IDA S.
APPLICANT: RITHER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGIL AND A MUTATION
TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1.9%; Score 43.6; DB 5; Length 51; 92.0%; Pred. No. 0.0021; tive 0; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                              SOFTWARE: Satentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Search completed: August 21, 2002, 11:59:18
Job time: 32806 sec
                                                                                                                                              CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     91532-PCT
                                                                                                                                                                                                                                                                                                                   MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 9153
TELECOMONIOLEATION INFORMATION:
TELEPHONE: 202-661-3000
TELEFAX: 202-622-0944
TELEX: 614627 CUSH
INFORMATION FOR SEQ ID NO: 37:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                       1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26581
                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 19920110
CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 2656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 92.0%
les 46; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           : 51 base pairs
                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS: single
                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                    COUNTRY: U.S.A.
ZIP: 20036-5601
```

```
APPLICATION NUMBER: US/08/522,421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FRIEDMAN, MENDEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nucleic acid
EDNESS: single
                                                                                                                                       FILING DATE: 22-MAR-1 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                        PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                             APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                             RIOR APPLICATION DATA: APPLICATION NUMBER:
                                                                                                                                                                                                                                                       PRIOR APPLICATION DATA:
                                                PRIOR APPLICATION DATA:
                                                                                                                                                                                                     PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM: ERT1B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ALLEN,
                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: CORIGINAL SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                  FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-522-421-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-797-226-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT:
                                                                                                                                                                                                                                                                                                                                                              PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                 PRIOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         873 ggaattigaagcctacattaaigcticiggagaacaiggaatigiggittictctiiggg 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5.8%; Score 135; DB 5; Length 513; 100.0%; Pred. No. 4.2e-29;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: Whotton, Lee Colin
TITLE OF INVENTION: DNA, DNA CONSTRUCTS, CELLS AND PLANTS
TITLE OF INVENTION: DERIVED THEREFROM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Indels
                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pillsbury Madison & Sutro, L.L.P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 100.0%; Pred. No. 4.20
Ansarches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Abu-Bakar, Umi Kalsom
Barton, Sarah Louise
Gallego-Velgas, Pedro Pablo
Gray, Julie Elizabeth
Grierson, Donald
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1100 New York Avenue, N.W.
                                                                                                       APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                                                            91532-PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER: IBM PC Compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Microsoft word CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Lowe, Alexandra Louise
                                                      PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 1, Application US/08522421
Patent No. 5908973
                                                                                                                                                      ATTORNEY/AGENT INFORMATION:
NAME: SCOTY, WAISON T.
REGISTRATION NUMBER: 9153/
TELEPROMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEPHONE: 202-861-3000
TELEFRAX: 202-822-0944
TELEFAX: 514627 COBH
INFORMATION FOR SEQ ID NO: SEQUENCE CHARACTERISTICS:
               E: Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Floppy disk
                                                                                                                                                                                                                                                                                                                                : 513 base pairs NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                993 aatccctcagacagt 1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: Picton, Steve
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   350 AATCCCTCAGACAGT 364
                                                                                                                                                                                                                                                                                                                                                                  single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CORRESPONDENCE ADDRESS:
     COMPUTER READABLE FORM:
                                                                                                                      FILING DATE: 1992011
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: cDNA PCT-US92-00282-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Washington
                                                      OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20005-3918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE:
                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                     COPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    US-08-522-421-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COUNTRY:
                                                                                                                                                                                                                                                                                                                                LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE:
```

ô

```
1119 cacccatgctggttcccatggtgtttatgaaagcatatgcaatggcgttcccatggtgat 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1059 acttgttaagtggctaccccaaaacgatctgcttggtcacccgatgacccgtgcctttat 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       965 AATAGTGAAATGGGCACCACAAAAACAGGTGCTTGCACATCCCGCGGTAGCAGGGTTTTT 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1025 CACTCATTGTGGTTGGAATTCTACGCTTGAAAGTATATGTGAAGAAGTCCCTATGGTGT 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 2.4%; Score 54.6; DB 2; Length 1669; Best Local Similarity 59.2%; Pred. No. 1.1e-05; Matches 93; Conservative 0; Mismatches 64; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1179 gatgcccttgtttggtgatcagatggacaatgcaaag 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1085 CAGGCCATTTCTAGCAGCCAACTGGTGAACGCAAGG 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                      APLING DATE: 22-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 12-JUL-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: GB 9320988.0
                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: GB 9305865.9 FILING DATE: 22-MAR-1993
                                                                        APPLICATION NUMBER: GB 9305868.3
FILING DATE: 22-MAR-1993
PRIOR APPLICATION DATE:
APPLICATION NUMBER: GB 9305869.1
                                                                                                                                                                                                                           APPLICATION NUMBER: GB 9305859.2 FILING DATE: 22-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: GB 9305866.7
FILING DATE: 22-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GB 9305860.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GB 9305862.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GB 9314351.9
                                                                                                                                                IUMBER: GB 9305869.1
22-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ; Sequence 1, Application US/08797226
; Patent No. 5959180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ROCKHOLD, DAVID R
STAPLETON, ANDREW
GARBARINO, JOAN E
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE: 12-OCT-1993
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOEHS, CHARLES P
11-JAN-1996
JN: 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 22-MAR-1993
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FILING DATE: 22-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH: 1669 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              93; Conservative
```

g ŏ ò g ò 엄 g

ò

ô

```
107 tagtgcccatggaggccactggttcaccatgaggtcggtggtggagaaactcattc 166
                                                                                                                     425 AATACTACACAAAAAAATCTATCCAGTGCCGTATGACCAAGAAGAAGGAGCGTT 484
                                                                                                                                                                                                                                                                                                                                                                                                       287 tcaaggctittgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaa 346
                                                                                                                                                                                                                                                                                                                                                                                                                                       485 ACCAATCATTTGGAAACAATCACTTTGCTGAGCGATCATTCCTAACTGCTCCTCAGACAG 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    545 AGTACAGGAATAAACATGATATTGGCCTGATACTTCATCAACTGCCAGAGCCTCCTG 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         403 aaagacaamaaattagtagaatacttaaaggagagttcttttgatgcagtgtttctcgat 462
47 ttcctctatgtgtgtgtctgctgctgacctgtggctttgccgaggcagggaagctactgg 106
                                              245 TITCTGCAGGGTTTTCTTCTTAGCACTTTGGGGCATGGTTGTAGGTGACAAGCTGCTGG 304
                                                                                                                                                                                                  167 tcaggggggaatgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                                                                                                                                                   365 ACCGGGGTCATGAGATTGTAGTGGTGGTGCTGAAGTTAATTTGCTTTTGAAAGAATCCA 424
                                                                                                                                                                                                                                                                                                       227 tgaattgcacagtgaagacttattcaacttcatataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      347 tgggttcatacaatgacatt----tttgacttattttttcaaattgcaggagtttgttt 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           463 cettttgataactgtggettaattgttgccaaatatttctccetecetecgtggtette 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              523 gccaggggaatactttgccactatcttgaagaaggtgcacagtgccctgctcctttcc 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         785 ACATTCCCCAGGTGCTACACAAGTTTCAGACCACATGACTTTTCCCCAAGGTGGCC 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          605 CAGGACAGGACACCCTGAACTTCTTTAAGGAGAGCAAGTTTGATGCTCTTTTCACAGAC 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            665 CCAGCCTTACCCTGTGGGGTGATCCTGGCGAGTATTTGGGCCTACCATCTGTGTACCTCT 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               725 TCAGGGGTTTTCCGTGTTCCCTGGAGCATACATTCAGCAGAAGCCCAGACCCTGTGTCTC 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                583 tatgiccccagaalicicitagggiictcagaigccaigaciiicaaggagagagagagg 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  643 aaccacatcatgcacttggaggaacatttattatgccaccgttttttcaaaaatgcccta 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               703 gaaatagcctctgaaattctccaaacacctgtt-acggagtatgatctctacagccacac 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           845 AACTICCTIGITAATITGITGGAGCCCTAICTATITIATIGICIGITITCAAAGTAIGAA 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               APPLICANT: OVENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENITON: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENITION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             822 catgatetteattggtggtateaactgecateagggaaageegt 865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES: 40
CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHWAN & CUSHWAN
STREET: 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 20, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: U.S.A. ZIP: 20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCT-US92-00282-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                    963 TGGTGGATCTTGTCAGCTATGCATCCGTGTGGCTGTTCCGAGGGGACTTTGTGATGGACT 1022
                                                                                                                                                                                                               560 cacagigeceigeteetetiteetaigteeceagaaitetetitagggiteteagaigeea 619
                                              620 tgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatgcc 679
                                                                                                                                                                 843 TGACATTCCTGCAAAGGGTCAAGAACATGCTCTACCCTCTGGCCCTGTCCTACATTTGCC 902
                                                                                                                                                                                                                                                                                                                    740 agtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttggact 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6.2%; Score 143.6; DB 5; Length 1219; 50.8%; Pred. No. 2.3e-31; tive 0; Mismatches 399; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
ITILE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DS/ANS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SSEE: CUSHMAN DARBY & CUSHMAN 1: 1615 L STREET, N.W. WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PCT/US92/00282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 8, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 26581
REFERENCE/DOCKET NUMBER: 915
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1083 AGCCACTATCTCAGGTCTGT 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       860 agccgttgcctatggaattt 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1219 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity 50.89
Matches 419; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICATION NUMBER: PC
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    202-822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUMBER OF SEQUENCES: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Y: U.S.A.
20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEONESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PCT-US92-00282-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US92-00282-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
```

σ

```
724 IGTCGATICCTGCTGTTTTTTTTGGAGGTACATTCCATGTGACTTAGACTTTAAGGCCA 783
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 91532-PCT TELECOMMUNICATION INFORMATION: TELEPHONE: 202-861-3000
                                                                                                                         CUSHMAN DARBY & CUSHMAN
                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                    E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                              1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NAME: SCOTT, WATSON T. REGISTRATION NUMBER: 26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 1197 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEFAX: 202-822-0944
TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 421; Conservative
                                                                                                                                                                                                                                                                                                                                                                                  CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               single
                                                                         NUMBER OF SEQUENCES: 4:
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                    OPERATING SYSTEM:
                                                                                                                                                                  WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                               7RY: U.S.A.
20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                  FILING DATE:
                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US92-00282-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               440 ACTCTGCTATGCTTTTGTCTGGCTGTTCCCACTTACTGCACAAGGAGCTCATGGCCT 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     485 ttgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgccact 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            785 actttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggtatca 844
                                                                                                                                                                                                                                                           140 TGCTGGGCCCAGGGTGTCCCATGCTGGAAGATACTGTTGATCCCAGTGGATGGCAGCC 199
                                                                                                                                                                                                                                                                                                                                                        128 actggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgaggtggttg 187
                                                                                                                                                                                                                                                                                                                                                                                                      200 ACTGGCTGAGCATGCTTGGGGCCATCCAGCAGCTGCAGCAGGGGGACATGAAATAGTTG 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                      188 tagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 260 TCCTAGCACCTGACGCCTCGTTGTACATCAGAGACGGAGCATTTTACACCTTGAAGACGT 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  248 attcaacttcatataccctggaggatctggaccgggagtt--caaggcttttgcccatgc 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             320 ACCCTGTGCCAATCCAAAGGGAGGATGTGAAAGAGTCTTTTGTTAGTCTCGGGCATAATG 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306 tcaatggaaagcacaagtacgaagtatattctctctattaatgggttcatacaatgacat 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        380 TITITGAGAAIGAITCITICCIGCAGCGIGIGAICAAAACAIACAAGAAAAIAAAAAGG 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   366 ttttgact-tatttttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            425 acttaaaggagagttctttgatgcagtgtttctcgatccttttgataactgtggcttaa 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    545 atcttgaagaaggtgcacagtgccctgctcctctttcctatgtccccagaattctcttag 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          680 CTCATTCAGATCACATGACCTTCCAGCGGGGGGGAAGAAGATGCTCATTGCCTTTTCAC 739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            665 aacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         740 AGAACTTTCTGTGCGACGTGGTTTATTCCCCGTATGCAACCCTTGCCTCAGAATTCCTTC 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                860 ACTITGIGAAGGAIGACCCTAGGCCCATCATGCCCAATATGGTTTTTGTTGGTGGAATCA 919
                                                                                                                                                                                                               3; Gaps
                                                                                                                                                               Query Match 7.0%; Score 161.8; DB 5; Length 1190; Best Local Similarity 51.8%; Pred. No. 1.3e-36; Matches 414; Conservative 0; Mismatches 382; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 12, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      920 ACTGCCTTCACCAAATCC 938
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           845 actgccatcagggaaagcc 863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: OWENS, IDA S.
  TYPE: NUCLEIC ACID

STRANDEDNESS: single
TOPOLOGY: linear

MOLECULE TYPE: CDNA
PCT-US92-00282-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PCT-US92-00282-12
                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
```

```
85 gccgaggcagggaagctactggtagtgcccatggatgggagccactgg--ttcaccatga 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   424 TGAATATGCACATCAAAGAAGAAATTTTTCACCCTGACAGCCTATGCTGTTCCATGGA 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      263 ccctggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagcac 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      320 aagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatttt 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                380 tttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagagtt 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          304 GCTGAGAGTGGAAAGGTGTTGGTGGTGCCCACTGATGGCAGCCCCTGGTCTCAGTCATGC 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       143 ggtcggtggtggagaaactcattctcagggggcatgaggtggttgtagtcatgccagagg 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 203 tgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcatata 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         484 CCCAGAAGGAATTTGATCGCGTTACGCTGGGCTACACTCAAGGGTTCTTTGAAACAGAAC 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        544 ATCTTCTGAAGAGATATTCTAGAAGTATGGCAATTATGAACAATGTATCTTTGGCCCTTC 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              604 ATAGGTGTTGTGTGGAGCTACTGCATAATGAGGCCCTGATCAGGCACCTGAATGCTACTT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                440 cttttgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaatatt 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   664 CCTTTGATGTGGTTTTAACAGACCCCGTTAACCTCTGTGGGGCGGTGCTGGCTAAGTACC 723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                500 tetecetecetecgtggtettegecaggggaataetttgecaetatettgaagaaggtg 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            6.9%; Score 161.2; DB 5; Length 1197; 52.6%; Pred. No. 2e-36; tive 0; Mismatches 373; Indels 6;
PatentIn Release #1.0, Version #1.25
```

```
APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                           OPERATING SYSTEM: PC_DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                           E: CUSHMAN DARBY & CUSHMAN 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE/DOCKET NUMBER: 91532-PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                     ; Sequence 14, Application PC/TUS9200282
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                              : Floppy disk
IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 14:
SEQUENCE CHARACTERISTICS:
                               957 GAGCCACTATCTCAGG 973
  858 aaayccgttgcctatgg 874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1066 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  202-822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       single
                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: NUCLEIC ACID
STRANDEDNESS: Sing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: CDNA PCT-US92-00282-14
                                                                                                                                                                                                                                                                                                                                WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                      20036-5601
                                                                                               RESULT 8
PCT-US92-00282-14
                                                                                                                                                                                                                                                                                             ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEFAX:
                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LENGTH:
                                                                                           RESULT
Š
                                   a
```

```
81 ctttqccgaggcagggaagctactggtagtgcccatggatgggagccactggttcaccat 140
                                                                                                                                202 CTGGGCTGAGAGTGGAAGGTGTTGGTGCCCATTCATGGCAGCCACTGGCTCAGCAT 261
                                                                                                                                                                                         141 gaggtcggtggtggagaaactcattctcagggggcatgaggtggttgtagtcatgccaga 200
                                                                                                                                                                                                                                                                                   201 g9tgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                       262 GCGGGAGGTCTTGCGGGAGCTCCATGCCAGAGGCCACCAGGCAGTGGTCCTCACCCCAGA 321
                                                                                                                                                                                                                                                                                                                  261 taccctggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagc 317
                                                                                                                                                                                                                                                                                                                                                                                                                           382 GACCCAGGATGAATTTGATCGCCATGTGCTGGGCCACACTCAACTGTACTTTGAAACAGA 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            318 acaagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4; Gaps
Query Match 7.9%; Score 183.6; DB 5; Length 1066; Best Local Similarity 53.5%; Pred. No. 6.7e-43; Matches 429: Conservative 0; Mismatches 369; Indels 4;
                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
```

TELEFAX: 202-822-0944 TELEX: 6714527 CUSH INFORMATION FOR SEQ ID NO: 18:

SEQUENCE CHARACTERISTICS: LENGTH: 1190 base pairs

```
378 tttttcaaattgcaggagtttgtttaaagacaaaaattagtagaatacttaaaggagag 437
                                       502 TCATAGGTCTTGTGTGGAGCTACTACATAATGAGGCCCTGATCAGGCACCTGAATGCTAC 561
                                                                               438 ttettttgatgeagtgtttetegateettttgataactgtggettaattgttgeeaata 497
                                                                                                           498 tttctccc:cccctccgtggtcttcgccaggggaatactttgccactatcttgaagaagg 557
                                                                                                                                                                                                            622 CCTGTCGATTCCTACTGTGTTTTTTTGAGGAACATTCCATGTGATTTAGACTTTAAGGG 681
                                                                                                                                                                                                                                                           558 tgcacagtyccctgctcctcttcctatgtccccagaattctcttagggttctcagatgc 617
                                                                                                                                                                                                                                                                                                  682 CACACAGTGTCCAAACCCTTCCTCCTATATTCCTAGATTACTAACAACCAATTCAGACCA 741
                                                                                                                                                                                                                                                                                                                                               618 catgactticaaggagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   742 CATGACAT:CATGCAAAGGGTCAAGAACATGCTCTACCTCTGGCCCTGTCCTACATTG 801
                                                                                                                                                                                                                                                                                                                                                                                                                                    678 ccaccgttitttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        798 ctatcccaaacccgtgatgcccaacatgatcttcattggtggtatcaactgccatcaggg 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 18. Application PC/TUS9200282
GENERAL INFORMATION:
APPLICANT: OKENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CUSHMAN DARBY & CUSHMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          91532-PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         981 GAAGCCACTATCTCAGGTCTGT 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               858 aaagccgttgcctatggaattt 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE/DOCKET NUMBER: 91
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RY: U.S.A.
20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 9
PCT-US92-00282-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY:
                                                                                                                            셤
                                                                                  ô
                                                                                                                                                                      ò
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
```

```
843 AGTGGTGGATCTTGTCAGCCATGCATCCTGGTGGTGTTCCGAGGGGAGTTTGTGATGGA 902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          798 ctateceaaacegtgatgeceaacatgatetteattggtggtateaaetgecateaggg 857
303 GGTGAATATGTACATCAAAGAAGAAGAACTTTTTCACCCTGACAACGTATGCCATTTCATG 362
                                                                                                                                                                                                                                   498 tttetecetecetecgtggtettegecaggggaataetttgecactatettgaagaagg 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      618 catgactttcaaggagagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                723 CATGACATTCCTGCAAAGGGTCAAGAACATGCTCTACCCTCTGGCCCTGTCCTACCTTTG 782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             738 ggagtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttgga 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      903 TTACCCCAGGCCGATCATGCCCAACATGGTCTTCATTGGGGGCATCAACTGTGCCAACGG 962
                                                                  261 taccctggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagc 317
                                                                                                                             363 GACCCAGGACGAATTTGATCGCCTTTTGCTGGGTCACACTCAATCGTTCTTTGAAACAGA 422
                                                                                                                                                                                                                                                                                                                                                                                            483 ACATAGGTCTTGTGTGGAGCTACTGCATAATGAGGCCCTGATCAGGCACCTGCATGCTAC 542
                                                                                                                                                                                                                                                                                                                                                                                                                                                           438 ttcttttgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaata 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    603 CCTGTCGATTCCTGCTGTTTTTTCTTGAGGAACATTCCATGTGATTTAGACTTTAAGGG 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   558 tgcacagtgccctgctcctttcctatgtccccagaattctcttagggttctcagatgc 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               678 ccaccgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                318 acaagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                                                                                                                                                 378 tttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagag 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
NUMBER OF SEQUENCES: 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        858 aaagccgttgcctatggaatttgaagcctacatta 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       963 GAAGCCACTATCTCAGGTCTGTATTGGTGCCTTTA 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STAL.
COUNTRY: C. 2018 - 5601
ZIP: 20036-5601
COMPUTER READABLE FORM:
WEDIUM TYPE: Floppy disk
WEDIUM TYPE: Floppy disk
"TYPE: TBM PC COMPATIBLE
"TWEN: TBM PC COMPATIBLE
"TWEN: TBM PC CONFOSTMS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            E: CUSHMAN DARBY & CUSHMAN 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICATION NUMBER: PCT/US92/00282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 16, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCT-US92-00282-16
```

δλ g

a

ö

δ 셤 δy a ŏ 셤

à

셤

δ

```
438 ttcttttgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaata 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     537 ITCCTTCGATGTGTTTTAATAGACCCAATTTACCTCTGTGGGGCAGTGCTGGCTAAGTA 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            597 CCTATCAATTCCTGCTGTTTTTTTTTGAGGAACATTCCATGTGATTTAGACTTTAAGGG 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      618 catgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   717 CATGACATTCCTGCAAAGGGTCAAGAACATGCTCTACCCTCTGGCCCTGTCCTATG 776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                678 ccaccgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          738 ggagtatgatotoctacagoccacacatcaatttggttgttgcgaacggactttgtttgga 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    798 ctateceaaaeeegtgatgeeeaacatgatetteattggtggtateaaetgeeateaggg 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   201 ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  297 GGTGAATATGCACATCAAACAAGAGAAATTTTTCACCCTGACAACCTATGCCATTTCATG 356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               261 taccotggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagc 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         357 GACCCAGGATGAATTTGATCGCCTTGTGCTGGGCCACACTCAACTGTACTTTGAAACAGA 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             477 TCATAGGICITGIGIGAGCIACTGCATAATGAGGCCCTGAICAGGCACCTGAATGCIAC 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       498 ttteteceteceeteegtggtettegeeaggggaataetttgeeaetatettgaagaagg 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       837 AGTGGTGGATCTTCTCAGCCATGCATCTGTGTGGCTGTTCCGAGGGGACTTTGTGATGGA 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             141 gaggteggtggtggagaaaeteatteteagggggeatgaggtggttgtagteatgeeaga 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      318 acaagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 417 ACATITICTGAAGACATITICTAAAAGTATGGCAATITITGAAAAATTCATCTTTGGTCTT 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                378 tttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagag 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                       Score 186.6; DB 5; Length 1448;
Pred. No. 1.1e-43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0; Mismatches 364; Indels
                                       REFERENCE/DOCKET NUMBER: 91532-PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
NAME: SCOTT, WATSON T. REGISTRATION NUMBER: 26581
                                                                                                                                         TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                            8.0%;
                                                                                                                                                                                                                 1448 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity 53.89
Matches 429; Conservative
                                                                                                                     202-822-0944
                                                                                                                                                                                                                                                                 single
                                                                                                                                                                                                                                     TYPE: NUCLEIC ACID
STRANDEDNESS: singl
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                           MOLECULE TYPE: CDNA HYPOTHETICAL: YES
                                                                                                                                                                                                                                                                                                         MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                        PCT-US92-00282-16
                                                                                                                       TELEFAX:
                                                                                                                                                                                                                      LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
```

g

δ

g ŏ g δλ

ò

```
ВЪ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
1251 tgttctggaaatgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaa 1310
                         1311 aagttacaaggagaacatcatgcgcctctccagccttcacaaggaccgccggtggagcc 1370
                                                                                                                                                                      1371 gctggacctggccgtgttctgggtggagtttgtgatgaggcacaagggcgccacacct 1430
                                                                                                                                                                                                                                                           1431 gegeecegeageceacgaecteacetggtaceagtaceatteettggaegtgattggttt 1490
                                                                                                                                                                                                                                                                                                                                                1491 cctcttggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggcta 1550
                                                                                                                            1362 tatctataaagagaatatcatgaaattatcaagaattcatcatgatcaaccggtgaagcc 1421
                                                                                                                                                                                                0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9.6%; Score 222.4; DB 5; Length 783; 99.6%; Pred. No. 3.9e-54; tive 0; Mismatches 1; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: ONENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
NUMBER OF SECURNICES: 40
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOFTHARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1615 L STREET, N.W. CITY: WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            91532-PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 22, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER: 91:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEFAX: 206-822-0944
TELEFAX: 210-822-0944
TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 22:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          : 783 base pairs
NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 223; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ; TOPOLOGY: __inear
; MOLECULE TYPE: CDNA
PCT-US92-00282-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: U.S.A. ZIP: 20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                       1551 ccggaa 1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1602 ccgaaa 1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 5
PCT-US92-00282-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
```

1093 ggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgtttatgaagc 1152

ô

```
1153 atatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcagatggacaatgca 1212
                                                                               471 GGTCACCCGATGACCCGTGCTTTATCACCCATGCTGGTTCCCATGGTGTTTATGAAAGC 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   81 ctttgccgsggcagggaagctactggtagtgcccatggatgggagccactggttcaccat 140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      243 GCGGGAGGCCTTGCGGGACCTCCATGCGAGGCCACCAGGTGGTGGTCCTCACCCTGGA 302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201 ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               183 CTGGGCTGAGAGTGGGAAGGTGCTGGTGGTGCCCACTGATGGCAGCCACTGGCTCAGCAT 242
=
=
=
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8.3%; Score 192.6; DB 5; Length 1008;
                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICANT: OWENS, IDA S.
APPLICANY: R.TTER, JOSEPH K.
TITLE OF INVERTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THERREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                               1273 gatttagamaatgetetaaaageagteateaatgaeaaagtta 1316
                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/00282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity 53.1%; Pred. No. 1.7e-45;
Matches 433; Conservative 0; Mismatches 379;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J9920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    : CUSHMAN DARBY & CUSHMAN 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 91532-PCT
                                                                                                                                                                                                                                                                                                                                                                        Sequence 10, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER: J:BM PC COMPATIBLE OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE/DCCKET NUMBER: 91.
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 10:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 2658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1008 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          202-822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     _
_
_
_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: U.S.A. ZIP: 20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FILING DATE:
                                                                                                                                                                                                                                                                                                                                        RESULT 6
PCT-US92-00282-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCT-US92-00282-10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGIH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
```

```
2009 caattgatccttaaccaataatggtcagtcctcatctctgtcctgcttcataggtgccac 2068
                                                                                                                                               2129 gcttggagtgcactgagaacagcatatgatttcttgctttggggaaaaagaatgatgcta 2188
                                                                                                                                                                                                                                                                                           1949 ccgctgcccctactgcaaatggcagttttaatcttatcttttggcttctgcagatggttg 2008
                                                                      847 TTACTTTTCTTACTCTGAAACATGCCCTGTTTGGGAGTGCGGGATTCAAAGGTGGTCCCA 906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 102 ctttagctctgggagttgtggaaaggtgctggtgtggcccacagaatacagccattggat 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 14.8%; Score 344.4; DB 4; Length 2107; Best Local Similarity 53.9%; Pred. No. 5.6e-89; Matches 811; Conservative 0; Mismatches 671; Indels 24; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        135 caccatgaggtcggtggtggagaaactcattctcaggggggatgggtggttgtagtcat 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE OF INVENTION: CHARACTERIZATION AND USE OF AN ISOLATED URIDINE ITLE OF INVENTION: DIPHOSPHO-GLUCURONOSYLTRANSFERASE
CURRENT APPLICATION NUMBER: US/09/180,852
CURRENT FILING DATE: 1999-02-08
EARLIER APPLICATION NUMBER: PCT/CA97/00328
EARLIER FILING DATE: 1997-05-16
EARLIER APPLICATION NUMBER: US 08/649,319
EARLIER FILING DATE: 1996-05-17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 1, Application US/09180852
Patent No. 6287834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: BELANGER, Alain
APPLICANT: HUM, Dean W.
APPLICANT: BEAULIEU, Martin
APPLICANT: LEVESQUE, Eric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQ ID NOS: 2
SOFTWARE: PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1267 TTTCCTACAACT 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILE REFERENCE: 1259-449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2309 tttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; LOCATION: (52)..(1644)
US-09-180-852-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LENGTH: 2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-09-180-852-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TYPE: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 1
                                                                                                                            ŏ
                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                      음
                                                                                                                                                           음
                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
```

```
1191 tggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaa 1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     951 tccagagaagaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcct 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1011 giggcggiacactggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagig 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1071 gotaccccaaaacgatctgottggtcacccgatgacccgtgcctttatcacccatgctgg 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1131 ttcccatggtgttttatgaaagcatatgcaatggcgttcccatggtgatgatgccttgtt 1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1242 tgcggatcaacatgataacattgctcacatgaaagccaagggagcagccctcagtgtgga 1301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1062 atggagatttgatggcaagaagccaaatactttaggttccaatactcgactgtataagtg 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1122 gttaccccagaatgaccttcttggtcatcccaaaaccaaagcttttataaactcatggtgg 1181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1182 aaccaatggcatctatgaggcgatctaccatgggatccctatggtgggcattcccttgtt 1241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          402 ttgggaatattctgactataataaagctctgtgaagatgcagttttgaacaagaaact 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   195 gccagaggtgagttggcaactgg-----gaagatcactgaattgcacagtgaagactta 248
                                                                                                 ---gttcaaggcttt 296
                                                                                                                                                  297 tgoccatgotcaatggaaagcacaagtacgaagtatatattctotattaatgggttcata 356
                                                                                                                                                                                                                                                                                                     417 agtagaatacttaaaggagagttcttttgatgcagtgtttctcgatccttttgataactg 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      477 tggcttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatact 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           537 ttgccactatcttg---aagaaggtgcacagtgccctgctcctcttcctatgtccccag 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 651 catgcacttggaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagc 710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   711 ctctgaaattctccaaacacctgttacggagtatgatctctacagccacacatcaatttg 770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  771 gttgttgcgaacggactttgttttggactatcccaaacccgtgatgcccaacatgatctt 830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        822 gctcattcgaacctattgggattttgaatttcctcgcccattcttaccaaatgttgattt 881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 831 cattggtgtatcaactgccatcagggaaagccgttgcctatggaatttgaagcctacat 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  882 tgttggaggacttcactgtaaaccagccaaacccttgcctaaggaaatggaagatttgt 941
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   891 taatgettetggagaacatggaattgtggttttetettttgggatcaatggtetcagaaat 950
                                                222 atcttcggcttctattcttgtcaatgccagtaaatcatctgctattaaattagaagttta 281
                                                                                                                                                                                                                                                 342 gacatatagtatttcaaaaaatacattttggtcatatttttcacaactacaagaattgtg 401
                                                                                                                                                                                                                                                                                                                                                                                                                                                     462 tatgagaaaactacaagagtcaaaatttgatgtccttctggcagatgccgttaatccctg 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       522 tggtgagctgctggctgaactacttaacataccctttctgtacagtctccgcttctctgt 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  702 tatgotttattttgacttttggtttcaagcatatgatctgaagaagtgggaccagtttta 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 762 tagtgaagttctaggaagacccactacattatttgagacaatggggaaagctgaaatgtg 821
                                                                                                 249 ttcaacttcatataccctggaggatctggaccggga-----
                                                                                                 οy
                                                                                                                                                셤
                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

```
2105 gagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttcttg 2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtg 1744
                                                                                                                                                                  1676 TTAAATTCATTTTATTCTTATTAAGGAAATACTTTGCATAAATTAATCAGCCCCAGAGTG 1735
                                                                                                                                                                                                                                                                    1796 ATGTATCGTGCCCCCTCCGGTGTCTTTGATCAGGATGACATGTGCCATTTTTCAGAGGAC 1855
                                                                                                                                                                                                                                                                                                                                                                                                          1985 tcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatc 2044
                                                                                                                                                                                                                                                                                                                                                                                                                       1976 ICTITITIGETICIGCAGAIGGITGCAAITGAICCITAACCAAAAAIGGICAGICCICAIC 2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2225 ttgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctg 2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2216 TIGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCAAAATACAGCTATGAAGTGCTG 2275
                                                                                                                                                                                                                                                     1805 atgirtcgigcccctccggigtctttgatcaggatgacatgigccattttcagaggac 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
NUMBER OF SEQUENCES: 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 25, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 3
PCT-US92-00282-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                  ò
                                                                                                                                                                          g
                                                                                                                                                                                                    ö
                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
```

U.S.A.

COUNTRY:

```
1351 aaggaccgcccggtggagccgctggacctggccgtgttctggggtggagtttgtgatgagg 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1530 taaatgttgtgcttatggctaccggaaatgcttggggaaaaagggcgagttaagaaagc 1589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1590 ccacaaatccaagacccattgagaagtgggtgggaaataaggtaaaaattttgaaccattc 1649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1770 ataatagactegetagteagtaaagatatttgaatatatgtategtg-eeeeeteeggtgte 1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1829 tttgatcaggatgacatgtgccattttcagaggacgtgcagacaggctggcattctaga 1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1889 ttacttttcttactctgaaacatggcctgtttgggagtgcgggattcaaaggtggtccca 1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          788 ITICATCAGGATGACATGTGCCATTTTTCAGAGGACGTGCAGACAGGCTGG-ATTCTAGA 846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       488 TAAATGTTGTGCTTATGGCTACCGGAAATGCTTGGGGAAAAAAGGGGCGAGTTAAGAAAGC 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           548 CCACAAATCCAAGACCCATTGAGAAGTGGGTGGGAAATAAGGTAAAATTTTGAACCATTC 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels 3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   41.7%; Score 967.2; DB 5; Length 1561; 98.0%; Pred. No. 3.3e-268; tive 0; Mismatches 18; Indels 3;
                                             COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
OPERARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: 91532-PCT
                                                                                                                   PCT/US92/00282
                                                                                                                                                                                                                                        TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                       TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 2658
             COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                            1561 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best_Local Similarity 98.09
Matches 1011; Conservative
                                                                                                                                  19920110
                                                                                                                                                                                                                                                                        202-822-0944
                                                                                                                                                                                                                                                                                                                                                             TYPE: NUCLEIC ACID
STRANDEDNESS: single
                                                                                                                   APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                               ; MOLECULE TYPE: CDNA
PCT-US92-00282-25
                                                                                                                                                                                                                                                                                                                                                                                                linear
20036-5601
                                                                                                                                                 CLASSIFICATION:
                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                           TELEFAX:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
```

```
1436 ACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCG 1495
       g
                                                                                                               ολ
                                                                                                                                                  g
                                                                                                                                                                                                                      g
                                          οž
                                                                              g
                                                                                                                                                                                     õ
                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                        οy
                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Óλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 56 TGCTGGGCCCAGTGGTGCTCCCATGCTGGGAAGATACTGTTGATCCCAGTGGATGGCAGCC 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       128 actggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgaggtggttg 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          116 ACTGGCTGAGCATGCTTGGGGCCCATCCAGCAGCTGCAGCAGGGGGACATGAATAGTTG 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             188 tagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                176 TCCTAGCACCTGACGCCTCGTTGTACATCAGAGCGAGCATTTTACACCTTGAAGACGT 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   248 attcaacttcatataccctggaggatctggaccgggagtt--caaggcttttgcccatgc 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       236 ACCCTGTGCCATTCCAAAGGGAGGATGTGAAAGAGTCTTTTGTTAGTCTCGGGCATAATG 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306 tcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatgacat 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             296 ITTTTGAGAATGATTCTTTCCTGCAGCGTGTGATCAAAACATACAAGAAATAAAAAGG 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 69.4%; Score 1609.2; DB 5; Length 2336; Best Local Similarity 82.7%; Pred. No. 0; Matches 1865; Conservative 0; Mismatches 388; Indels 3;
                                                                                                                                          APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
NUMBER OF SEQUENCES: 40
                                                                                                                                                                                                                                                                                                                                                                                                                                       PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                     ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                               CURRENT APPLICATION DATA:
APPLICATION UNBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                       Sequence 1, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                       PC-DOS/MS-DOS
Db 2292 TTTTTCTGATGTTTCCTACAACT 2314
                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER: IBM PC COmpatible OPERATING SYSTEM: PC-DOS/MS-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELETA: 202-994
TELETA: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 2336 base pairs
TYPE: NUCLEIC ACID
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE/DOCKET NUMBER: 91
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 2658
                                                                                                                                                                                                                                                                                                                                                                                    Floppy disk
                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                              WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FILING DATE: 19
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                             20036-560
                                                                                                                                                                                                                                                                                                                                                                                MEDIUM TYPE:
                                                                      ULT 2
-US92-00282-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT-US92-00282-1
                                                                                                                                                                                                                                                                                                              STATE:
```

g

οy

Q

οy

Dβ ò

Ω

```
1025 gaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1196 ACAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTGGAAATGA 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1316 ACATCAGGCGCCTCTCCAGCCTTCACAAGGACCGCCCGGTGGAGCCGCGTGGACCTGGCCG 1375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1445 acgacctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcg 1504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1205 acaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatga 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1265 cttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggaga 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1325 acatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctggccg 1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1385 tgttctgggtggagtttgtgatgaggcacaagggcgccacacctgcgccccgcagcc 1444
                                                                                                                                                                                                                                               356 ACTCTGCTATGCTTTTGTCTGGGTGTTCCCACTTACTGCACAACAAGGAGCTCATGGCCT 415
                                                                                              485 tigtigccaaatattictccctccctccgtggtcttcgccaggggaatactttgccact 544
                                                                                                                                                                                                 656 AGAACTITCIGIGGACGIGGITIATICCCCGIAIGCAACCCIIGCCICAGAAITCCITC 715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                425 acttaaaaggagagttcttttgatgcagtgtttctcgatccttttgataactgtggcttaa 484
                                                                                                                                                                                                                                                                                                                                                   605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664
                                                                                                                                                                                                                                                                                                                                                                                              596 CTCATTCAGATCACATGACCTTCCTGCAGGGGTGAAGAACATGCTCATTGCCTTTTCAC 655
                                                                                                                                                                                                                                                                                                                                                                                                                                                    665 aacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      785 actttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggtatca 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       845 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  905 aacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaaag 964
```

oy G	141	gaggteggtggtggagaaacteatteteagggggeatgaggtggttgtagteatgeeaga 200 1
Oy Op	201	ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
oy D	261	taccctggaggatctggaccgggagttcaaggcttttgcccatgctcaatggaaagc 317
Oy Dp	318	acaagtacgaagtatattctctattaatgggttcatacaatgacattttgacttatt 377
Oy Dp	378	tttttcaaattgcaggagtttgtttaaagacaaaaattagtagaatacttaaaggagag 437
op Oy	438	ttttttgatgcagtgtttttgatcttttgataactgtggcttaattgttgccaaata 497
oy op	498	tttctccctccctccgtggtcttcgccagggaatactttgccactatcttgaagaagg 557
Oy Dp	558 552	tgcacagtgccctgctcctcttcctatgtccccagaattctcttagggttctcagatgc 617
Qy Dp	618	catgactttcaaggagaggagtacggaaccacatcatgcacttggaggaacattattatg 677
Oy Dp	678	ccaccgttttttcaaaaatgcctagaaatagcctctgaaattctccaaacacctgttac 737
OY Db	738	ggagtatgatctctacagccacacatcaatttggttgttgcgaacggactttgtttg
oy D	798	ctatoccaaacccgtgatgcccaacatgatcttcattggtggtatcaactgccatcaggg 857
Oy Dp	858 852	aaagccgttgcctatggaatttgaagcctacattaatgcttctggagaacatggaattgt 917
O.Y	918	ggttttctctttgggatcaatggtctcagaaattccagagaagaaagctatggcaattgc 977
Qy Dp	978	tgatgetttgggcaaaateceteagacagteetgtggeggtacaetggaaceegaeeate 1037
Oy Dp	1038 1032	gaatottgogaacaacacgatacttgttaagtggctaccccaaacgatctgcttggtca 1097
QY Db	1098 1092	ccgatgaccgtgcctttatcacccatgctggttcccatggtgtttatgaaagcatatg 1157
Qy Dp	1158	caatggcgttcccatggtgatgatgccttgtttggtgatcagatggacaatgcaaagcg 1217

1272 AGAAAATGCTCTAAAAAGCAGTCATCAATGACAAAAGTTACAAGGAAGAACATCAGGGGCGCCT 1331 1818 octoogstyctttgatcaggatgacatytgocattttcagaggacytgcagacaggct 1877 1218 catggagactaagggagctggagtgaccctgaatgttctggaaatgacttctgaagattt 1277 1212 CATGGAGACTAAGGGAGCTGGACTGACCTGAATGTTCTGGAAATGACTTCTGAAGATTT 1271 1278 agaaaatgetetaaaaageagteateaatgacaaaagttacaaggagaaacateatgegeet 1337 1338 ctccayccttcacaaggaccgcccggtggagccgctggacctggccgtgttctgggtgga 1397 1332 CTCCAGCCTTCACAAGGACCGCCGGTGGAGCCGCTGGACCTGGCCGTGTTCTGGGTGA 1391 1398 gtttgtgatgaggcacaagggcgccacacctgcgcccgcagcccacgacctcacctg 1457 1392 GTTTGTGAIGAGCACAAGGGCGCCCACACTGCGCCCCGCACGCCCACGACCTCACCTG 1451 1458 gtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctgacagtggc 1517 1452 GTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCGTCGTGCTGACAGTGGC 1511 1518 cttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaaaaagggcg 1577 1638 tttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgttaaattcatttt 1697 1632 TTTGAACCATTCCCTAGTCATTTCCAAACTTGAAAACAGAATCAGTGTTAAATTCATTTT 1691 1758 tcttaaataaaaataatagactcgctagtcagtaaagatatttgaatatgtatcgtgcc 1817 1752 TCTTAAATAAAAATAGACTCGCTAGTCAGTAAAGATATTGAATATGTGTGCCC 1811 1878 ggcattctagattactttcttactctgaaacatggcctgtttgggagtgcgggattcaa 1937 1938 aggtggtccaccgctgctgccctactgcaaatggcagttttaatcttatcttttggcttct 1997 1998 gcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgtcctgcttc 2057 2118 atgaatgacttggagtgcactgagaacagcatatgattcttgctttggggaaaaa 2177 2112 ATGAATGAATGCTTGGAGTGCACTGAGAACAGCATATGATTTCTTGCTTTTGGGGAAAAA 2171 2178 gaatgatgctatgaaattggtgggtggtgtatttgagaagataatcattgcttatgtcaa 2237 2172 GAATGATGCTATGAAATTGGTGGTGGTGTATTTGAGAAGATAATCATTGCTTATGTCAA 2231 2238 atggagctgaatttgataaaaacccaaaatacagctatgaagtgctgggcaagtttactt 2297 2232 ATGGAGCTGAATTTGATAAAACCCAAAATACAGCTATGAAGTGCTGGGCAAGTTTACTT 2291 1872 GGCATTCTAGATTACTTTTCTTACTCTGAAACATGGCCTGTTTGGGAGTGCGGGATTCAA 1931 õ a ŏ g ö g ŏ a g ö a ö 요 ò g ò q ö ŏ 셤 ö 셤 a ö 유 ö a ò õ g ò

2298 tttttctgatgtttcctacaact 2320

ò

```
August 21, 2002, 02:52:32 ; Search time 148.28 Seconds (without alignments) 3843.200 Million cell updates/sec
                                                                                                                                                                                                                                                                 1 ctcagctgcagttctctgat......ttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                    767066
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                        383533 seqs, 122816752 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                      IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                             US-09-835-082-1
2320
                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                Run on:
```

1: /cgn2_6/ptcdata/2/ina/5A_COMB.seq:*
2: /cgn2_6/ptcdata/2/ina/5B_COMB.seq:*
3: /cgn2_6/ptcdata/2/ina/6A_COMB.seq:*
4: /cgn2_6/ptcdata/2/ina/6B_COMB.seq:*
5: /cgn2_6/ptcdata/2/ina/6B_COMB.seq:*
6: /cgn2_6/ptcdata/2/ina/backfiles1.seq:*
6: /cgn2_6/ptcdata/2/ina/backfiles1.seq:*
7: /cgn2_6/ptcdata/2/ina/backfiles1.seq:*
8: /cgn2_6/ptcdata/2/ina/backfiles1.seq:*
9: /cgn2_6/ptcdata/2/ina/backfiles1.seq:*
9:

Issued_Patents_NA:*

Database :

Description	Sequence 2, Appli Sequence 1, Appli Sequence 2, Appli Sequence 10, Appli Sequence 10, Appli Sequence 11, Appli Sequence 11, Appli Sequence 12, Appli Sequence 12, Appli Sequence 1, Appli Sequence 2, Appli Sequence 1, Appli Sequence 1, Appli Sequence 1, Appli Sequence 2, Appli Sequence 1, Appli	Patent No. 5447867
SUMMARIES	PCT - US92 - 00282 - 1 PCT - US92 - 00282 - 10 PCT - US92 - 00282 - 16 PCT - US92 - 00282 - 16 PCT - US92 - 00282 - 18 PCT - US92 - 00282 - 10 US - 09 - 103 - 46 - 11 US - 09 - 103 - 84 0A - 1	47867-2
88	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	9
% Query Match Length	2333 2334 2336 2007 783 1008 1048 10190 1197 1219 1669 1673 1731 1731 1731 1731 1731 1731 1731	1636
å Query Match	6 4 4 4 6 8 8 8 6 7 7 8 6 8 6 8 7 7 8 9 8 8 8 7 7 8 9 8 9 7 7 8 9 8 9	1.5
Score		35.2
Result No.	C C C C C C C C C C C C C C C C C C C	27

B &

3; Gaps

70.4%; Score 1633.4; DB 5; Length 2339; 83.3%; Pred. No. 0; tive 0; Mismatches 371; Indels 3;

Query Match
Best Local Similarity 83.33
Matches 1869; Conservative

; TOPOLOGY: linear ; MOLECULE TYPE: CDNA PCT-US92-00282-2

1, Appli 3, Appli 5180581 5, Appli 7, Appli 21, Appli	87, Appl 80, Appl 80, Appl 13, Appl				13, Appl																						
•			Sequence 3							MUTATION																	
332-1 090-3 916-5 725-7 838-21	38-87 50C-80 13-80 84-13	53-13 02-13	54B-13 11B-13	27-13	203-13 220-13	TS				JGT1 AND A								Version #1.25									
US-09-353-3 US-08-078-0 5180581-1 US-08-281-9 US-08-460-7 US-09-004-8	US-09-004-838-87 US-08-933-750C-80 US-09-234-613-80 US-08-480-784-13	JS-08-483-5 JS-08-487-0	JS-08-483-5	JS-08-850-7	PCT-US95-10	ALIGNMENTS		787007		FIC LOCUS UGT1		CUSHMAN					patible -DOS/MS-DOS	#1.0,	PCT/US92/00282				ER: 91532-PCT	<u></u>			
410124	4000			4 0	വ വ			APPLICATION PC/TUSSZUUZB FORMATION:	IDA S. JOSEPH K.	THE GENETIC THEREIN.		DARBY & EET, N.W.	i		٠	disk	IBM PC compatible SYSTEM: PC-DOS/MS	PatentIn Release	PCT/US	10	TION:	IT.	<u>m</u>	INFORMATION 861-3000	44	: :	ċ
5 4839 5 10607 5 1800 5 2793 5 2793 5 10815	വെവവ	ດດ	ഗഗ					ation P ON:	∵ ∝		ADDRESS	USHMAN L STRE	GTON	A.	0036-5601 READARLE FORM	Floppy disk	M PC CC	tentin	TION DE	199201	N: 435 INFORM?	WATSON	KET NUN	ON INFO	202-822-0944	SEO ID NO	TERISTI
							-2	z, Applicat INFORMATION		INVENTION	'SEQUENCES: IDENCE ADDRE	SEE: C 1615	WASHIN	. U.S	10036-5 READAR	TYPE:	R: IB	E: Pa	TION N	DATE:	AGENT	SCOTT,	CE/DOC	NICATI	202		
	34.6						028	γÏ	CANT	TITLE OF	NUMBER OF SEUU. CORRESPONDENCE	ADDRESSEE: CUSHMAN DA: STREET: 1615 L STREET	CITY:	COUNTRY: U.S.A.	ZIP: 2		COMPUTER: OPERATING	SOFTWARE:	CURRENT APPLICATION DATA APPLICATION NUMBER: P	FILING	CLASSIFICATION: 433 ATTORNEY/AGENT INFORMATION:	NAME: SCOTT, WATSON	REFERENCE/DOCKET NUMBER	TELECOMMUNICATION TELEPHONE: 202-	TELEFAX:	TELEX: INFORMATION	SEQUENCE
28 30 31 32 33	300	3 G	40		44		RESULT PCT-US92	GENERAL	AP	HH	CO			- 0	Ę	3	-	,	7	_ (AT			ਜ਼ੂ _ ਜ਼		INFO	SE
υυ	ပ	ပပ	ပပ	o o	ပပ		RES PC1																				

```
/clone="IMAGE.552115"
/clone="IMAGE.552115"
/clone="IMAGE.552115"
/clone="Organ: Kidney; Vector: pDNR-LIB (Clontech); Site_1:
Sfil (ggccgcctcggcc); Site_2: Sfil (ggccattatggcc); 5' and
3' adaptors were used in cloning as follows: 5' adaptor
sequence: 5'-CACGCCCATTATGGCC-3' and 3' adaptor sequence:
5'-ATTCTACAGCCCACTATGGCC-3' and 3' adaptor sequence:
5'-ATTCTACAGCCCACTATGGCC-3' and 3' adaptor sequence:
5'-ATTCTACAGCCCACTATGGCCC-3' and 3' adaptor sequence:
5'-ATTCTACAGCCCACTATGGCCC-3' and 3' adaptor sequence:
5'-ATTCTACAGCCCACTATGGCC-3' and 3' adaptor sequence:
5'-ATTCTACAGCCCACTATGGCCATGGC-3' and 3' adaptor sequence:
5'-ATTCTACAGGCCACTATGGCCATGGC-3' and 3' adaptor sequence:
5'-ATTCTACAGGCCCACTATGGCCATGGCCATGGCC-3' and 3' adaptor sequence:
5'-ATTCTACAGGCCCACTATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGGCATGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BG400591 833 bp mRNA linear EST 12-WAR-2C 602464244F1 NIH_MGC_75 Homo sapiens CDNA clone IMAGE:4592315 5',
Contact: Robert Strausberg, Ph.D.
Baall: ogabbs-remail.nih.gov
Tissue Procurement: CLOWTECH Laboratories, Inc.
CDNA Library Preparation: CLOWTECH Laboratories, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                      604 gggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggag 663
                                                                                                                                                                                                      " (bases 1 to 833)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             found through the I.M.A.G.E. Consortium/LLNL at. http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 27.6%; Score 640; DB 10; Best Local Similarity 91.1%; Pred. No. 1.3e-156; Matches 760; Conservative 0; Mismatches 60;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             784 gactttgttttggac-tatcccaaacccgtgatg 816
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       796 GCCCTTGTTTGGACTTATTCCGAACCCGTGCTG 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Plate: LLCM1330 row: h column: 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     High quality sequence stop: 800.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG400591.1 GI:13294039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
BG400591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG400591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
```

```
186 tgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagac 245
                                                                                                                                                                                                                                                                                            306 tcaatggamagcacaagtacgaagtatattetetattaatgggtteatacaatgacat 365
                                                                                                                                                                                                                                                                                                                                                                                                              421 gaatact-taaaggagagttettttgatgeagtg---tttetegateettttgataactg 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      477 tggcttaattgttgccaaatatttctccctcccctcgtggtcttcgccaggggaatact 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   481 TGGCTTAA%GGTTGCCAAATATTTCTCCCTCCCTCCGTGGTCTTCGCCAGGGGAATACT 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              537 ttgccactatcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaat 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       597 tetettagggtteteagatgecatgacttteaaggagagagagtaeggaaceacateatgea 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             541 TTGCCACTATCTTGAAGAAGGTGCACAGTGCCCTGCTCCTCTTTCCTATGTCCCCAGAAT 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  601 TCTCTTAGGGTTCTCAGATGCCATGACTTTCAAGGAGAGAGTACGGAACCACATCATGCA 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      715 gaaattetecaaacaectgttaeggagtatgatetetaeagceacacateaatttggttg 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    721 GAAATTCTCCAAACACCCTGTTACGGAGTATGATCTCTAACAGCCACACTTCAATTGGTTG 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                657 cttgg--acgaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctct 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               775 ttgcgaacggactttgttttggactatcccaaacccgtgatgcccaacatgatc 828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                         ŏ
                                                                                     a
                                                                                                                                             g
                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
```

Search completed: August 21, 2002, 09:38:48 Job time: 24936 sec

Indels 14; Gaps

Length 833;

à

à 윱 ŏ g ŏ q δλ g δ g ŏ g à

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
AUTHORS
                                                 JOURNAL
                       TITLE
                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG469506 829 bp mRNA linear EST 21-MAR-2001 602532818F1 NIH_MGC_15 Homo sapiens CDNA clone IMAGE:4660540 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 029)
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1258 gaaatgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaagttac 1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1318 aaggagaacatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggac 1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1438 gcagcccacgacctcacctgtaccagtaccattccttggacgtgattgttcctcttg 1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1558 tgcttggggaaaaagggggggttaagaaagccacaaatccaagacccattgagaagtg 1617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1618 ggtgggaaataaggtaaaa-ttttgaaccattccctagtcatttccaaacttgaaaacag 1676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1677 aatcagtgttaaattcattttattcttattaaggaaatactttgcataaattaatcagcc 1736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1737 ccagagtgctttaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagat 1796
                                                                                                                                                                     1078 caaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccat 1137
                                                                                                                                                                                                                                                             1138 ggtgtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgat 1197
                                                                                                                                                                                                                                                                                                                                                          1198 cagatggacaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctg 1257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1378 ctggccgtgttctgggtggagtttgtgatgaggcacaagggcgccacacctgcgcccc 1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1498 gccgtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaa 1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     361 GCAGCCCACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481 TCCTTGGGGAAAAAAGGGCGAGTTAAGAAAGCCCACACAAATCCAAGACCCATTGAGAAGTG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 GGTGTTTATGAAAGCATATGCAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGAT 120
                                                                                                                                                                                                                                                                                                                                                                                                           121 CAGATGGACAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 GAAATGACTTCTGAAGATTTAGAAAATGCTCTAAAAGCAGTCATCAATGACAAAAGTTAC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  241 AAGGAGAACATCATGCGCCTCTCCAGCCTTCACAAGGACCGCCGGTGGAGCCGCTGGAC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             301 creeccererresersesasrrrersarsasscacaassescececcacacces
                                                                                                                      4; Gaps
                                                                                                                                                                                               2 CAAAACGATCTGCTTGGTCACCCGATGACCGGTG-CTTTATCACCCATGCTGGTTCCCAT 60
                                                                     Length 723;
                                                                                                                    20; Indels
                                                                   Score 644; DB 10;
Pred. No. 1.1e-157;
0; Mismatches 20;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG469506.1 GI:13401781
                                                                        27.8%;
96.7%;
                                                                                                                    Matches 700; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BG469506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1797 attt 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      719 ATGT 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             human.
                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG469506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
  ORIGIN
```

ŏ g à a à g

```
// note="Organ: culon: Vertor: pOTB7; Site_1: Xho1; Site_2: EcoR1; cDNA made by oligo-dT priming. Directionally cloned into EcoR1X/Xho1 sites using the following 5' and pror. GGCACGAG(G). Size-selected >500bp for average insert size 1.8kb. Library constructed by Ling Hong in the laboratory of Gerald M. Rubin (University of california, Berkeley) using ZAP-cDNA synthesis kit 190 c. 207 g. 246 t.
                                                                                                                                                CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: NIH Intramural Sequencing Center Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov clumn: 05 Plate: LLCM1458 row.c column: 05 Plate: LLCM1458 row.c column: 05 Llocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               125 gccactggttcaccatgaggtcggtggtggagaaactcattctcaggggggcatgaggtgg 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       185 tigtagicaigccagaggigagitggcaacigggaagaicacigaaitgcacagigaaga 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     245 cttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcccatg 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               305 ctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatgaca 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          365 tttttgacttattttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               378 ITCTTGACTTATTTTTTCGCATTGCAGGAGTTGGTTTAATGACCGAAAATTAGTAGAAT 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    425 acttaaaggagagttcttttgatgcagtgtttc-tcgatccttttgataactgtggctta 483
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     138 GICACIGGIICACCAIGCAGICGGIGGIGGAGAAACIIAICCICAGGGGGCAIGAGGIGG 197
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    318 CICAAIGGAAAGCACAGGCACAAAGIAITITITITITITATIAAIGAGIICAICCAGIGGII 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 89.9%; Pred. No. 6.4e-157;
Matches 732; Conservative 0; Mismatches 78; Indels 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="adenocarcinoma cell line"
/lab_host="DH10B (phage-resistant)"
                                                                            Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="IMAGE:4660540"
/clone_lib="NIH_MGC_15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 186 a
```

us-09-835-082-1.rst

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA Library Preparation: M. Bento Soares, Ph.D.
CDNA Library Arrayed by: Greg Lennon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NGT-CGAP clone distribution information can be
feund through the I.M.A.G.E. Consortium/LLNL at:
www-bp.lln.gov/bbpp/image/image.html
Insert Length: 1491
Sed primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="Organ: lung; Vector: pT773D-pac (Pharmacia) with a modified polylinker; 1st strand cDNA was prepared from pooled lung tumor tissue, and was then primed with a Not I oligo(dT) primer. Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pT773 vector. Library went through one round of normalization. Library constructed by Bento Soares and M. Patima Bonaldo.
                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mummalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                 Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael R.
Emmert-Buck, M.D., Ph.D.
                                                                                                                                                                                                          NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Gancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /tissue_type="squamous cell carcinoma, poorly differentiated (4 pooled tumors, including primary and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1605 ccattgagaagtgggtgggaataaggtaaaattttgaaccattccctagtcatttccaa 1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1785 gtcagtaaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgaca 1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1665 acttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcata 1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .725 aattaatcagccccagagtgctttaaaaaattctcttaaaataaaaataatagactcgcta 1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       755 CCCATGAAGAGTGGGTGGGAAATAGGGTAAATTTTTGAACCATCCCTACGTCATTTCCAA 696
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       695 CCTTGAAACAGCATCAAGTGTTAAATTCATCTTATTAAGAAAATACTTTGCATA 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      l; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                h 28.9%; Score 669.4; DB 9; Length 764; Similarity 96.8%; Pred. No. 2.5e-164; Osservative 0; Mismatches 22; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    l others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /dev_stage="adult"
/lab_host="DH10B (phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 232 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /clone_lib="NCI_CGAP_Lu19"
                                                                                                                                                                                                                                                                                   Unpublished (1997)
Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           High quality sequence stop: 454.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="IMAGE:2405161"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              133 g
                            AI831562.1 GI:5452233
                                                                                                                                                                                   (bases 1 to 764)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              156 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 96.89
Matches 693; Conservative
                                                                                                                                                                                                                                                                  Fumor Gene Index
                                                                                                          Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 242 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Source
                                                                                                       ORGANISM
ACCESSION
                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                        JOURNAL
                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FEATURES
                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
```

```
/lab_host="DH100 (phage-resistant)"
/lab_host="DH100 (phage-resistant)"
/note="Organ: Kidney; Vector: pOTPS; Site_1: XhoI; Site_2:
ECORI: CDNA made by Oligo-dT priming Directionally
cloned into EcoRI/XhoI sites using the following 5'
adaptor: GGCACGGG(G). Size-selected >SOObp for average
insert size 1.8kb. Library constructed by Ling Hong in
the laboratory of Gerald M. Rubin (University of
California, Berkeley) using ZAP-cDNA synthesis Kit
(Stratagene) and Superscript II RT (Life Technologies)."

a 160 c 170 g 191 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostom1;
Mammalia; Eutheria; Primates; Catarrhin1; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        602447772Fl NIH_MGC_14 Homo sapiens cDNA clone IMAGE:4586368 5',
                                                                                                                                                                           2145 gaacagcatatgatttcttgctttggggaaaagaatgatgctatgaaattggtggtgg 2204
1905 gaaacatgjcctgtttgggagtgcgggattcaaaggtggtcccaccgctgccctactgc 1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                     2205 tgtatttgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaa 2264
                                                                                                                                                                                                                                                                                             216 GAACAGCATATGATTTCTTGGGGAAAAAGAATGATGCTATGAAATTGGTGGTGG 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (bases 1 to 723)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 156 TGTATTTGAGAAGATAATCATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCAA 97
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Email: cgapbs-remail.nih.gov
Tissue Procurement: DCTP/DTP
CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="renal cell adenocarcinoma"
/lab_host="DH10B (phage-resistant)"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           found through the I.M.A.G.E. Consortium/LLNL at:
http://inage.lln.gov
Plate: LLCM1314 row: p column: 17
High quality sequence stop: 711.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       723 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="IMAGE:4586368"
/clone_lib="NIH_MGC_14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref-"taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG424452.1 GI:13330958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA sequence.
BG424452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG424452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BG424452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                       ŏ
                                                                                                                                 셤
                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
```

202 a

BASE COUNT

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AI831562/c
                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                             ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG747143 19-2001 697 bp mRNA linear EST 15-MAY-2001 602704364F1 NIH_MGC_15 Homo sapiens CDNA clone IMAGE:4857831 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalla; Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases I to 697)
                                                                                                                                                                                                                                                                                      1461 ccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctgacagtggcctt 1520
                                                                                                                                                                                                                                                                                                                                                                                                                                         1281 aaatgototaaaaagcagtoatcaatgacaaaagttacaaggagaacatoatgogoototo 1340
                                                                                                                                  1341 cagcetteacaaggacegeceggtggageegetggacetggeegtgttetgggtggagtt 1400
                                                                                                                                                                                                             1401 tgtgatgaggcacaagggcgcgccacacctgcgccccgcagcccacgacctcacctggta 1460
                                                                                                                                                                                                                                                                                                                                                                 1521 catcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaaaagggcgagt 1580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1641 gaaccattccct-agtcatttccaaacttgaaaacagaatcagtgttaaattcatttat 1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1700 tottattaaggaaatactttgcataaattaatcagccccagagtgctttaaaaaattctc 1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: NH Intramural Sequencing Center Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                            481 CATCACCTTTAAATGTTGTGCTTATGGCTACCGGAAATGCTTGGGGAAAAAAGGGCGAGT 540
                                                                                                                                                     361 TGTGATGAGGCACAAGGGGGCGCCACCACCCCCCGCAGGAGCCCACGACCTCGTA 420
                                                                                                                                                                                                                                                                                                                           421 CCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCGTGCTGACAGTGGCCTT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           241 AAATGCTCTAAAAGCAGTCATCAATGACAAAAGTTACAAGGAGAACATCATGCGCCTCTC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               659 TCTTATTACGGAAATACTTCGCCTACATT-ATCAGGCCCAGAGTGCTTT-ACAAATCCTC 716
                181 GGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTGGAAATGACTTCTGAAGATTTAGA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NIH-WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (WGC)
1760 ttaaataaaaataaatagactcgctagtcagtaaagatattt 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            http://image.llnl.gov
Plate: LLCM1710 row: o column: 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4857831"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D. Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       High quality sequence stop: 684. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="NIH_MGC_15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BG747143.1 GI:14057796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA sequence.
BG747143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG747143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COMMENT
                                                          à
                                                                                                                                  ά
                                                                                                                                                                        g
                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                 δy
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
```

```
/tissue_type="adenocarcinoma cell line"
/lab_host="hHi0B (phage=resistant);
/note="corgan: colon; Vector: pOTB7; Site_l: XhoI; Site_2:
ECORI; CDNA made by oligo-dr priming. Directionally
cloned into ECORI/XhoI sites using the following 5'
adaptor: GGCAGGAG(3. Size=selected >SOODp for average
insert size 1:8kb. Library constructed by Ling Hong in
the laboratory of Gerald M. Rubin (University of
California, Berkeley) using ZAP-CDNA synthesis kit
(Stratagene) and Superscript II RT (Life Technologies)"
77 a 168 c 184 g 168 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      wj39b01.xl NCI_CGAP_Lu19 Homo sapiens cDNa clone IMAGE:2405161 3' similar to 9b:M57899 UDP-GLUCURONOSYLTRANSFERASE LA PRECURSOR, MICROSOMAL (HUMAN);, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1210 gcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatgacttct 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1270 gaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggagaacatc 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1330 atgospectetecageetteacaaggacegeeeggtggageegetggaeetggeegtgtte 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1390 tgggtggagtttgtgatgaggcacaaggggcgcacacctgcgccccgcaggccacgac 1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1450 ctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctg 1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |510 acagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaa 1569
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            970 gcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactggaacc 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1030 cgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaaaacgatctg 1089
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                910 ggaattgtggttttctcttttgggatcaatggtctcagaaattccagagaagaagctatg 969
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62 GCAATTGCTGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGCGGTACACTGGAAACC 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  302 GCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTGGAAATGACTTCT 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              362 GAAGATITAGAAAATGCTCTAAAAGCAGTCATCAATGACAAAAGTTACAAGGAGAACATC 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 482 TGGGTGGAGTTTGTGATGAGGCACAAGGGCGCCCACACCTGCGCCCCCGCAGGCCACGAG 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 542 CTCACCIGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCGTGCTG 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 122 CGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAAAACGATCTG 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              29.3%; Score 679.2; DB 10; Length 697; 99.4%; Pred. No. 6.5e-167; ive 0; Mismatches 3; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1570 aaagggcgagttaagaaagcccacaaaatccaagacc 1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity 99.49
Matches 692; Conservative
                                                                                                                                                                                                                                                                                                                               177 a
```

```
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
                                                                                                                                                                                                                                                                                                                                                                                     SOURCE
                                       q
                                                                          ò
                                                                                                                                                                                g
G
                                                                                                            g
                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
                                                                                                                                                                                                                                               /tissue_type="transitional cell papilloma, cell line"
//lab.host="hBl0B (phage-resistant)"
//lote="Organ: bladder; Vector: pCMV-SPORT6; Site_1: NoLI;
//note_a"Organ: bladder; Vector: pCMV-SPORT6; Site_1: NoLI;
//lote_stall; Cloned unidirectionally; oligo-dT primed.
//lote_stall; Cloned unidirectionally; oligo-dT primed.
//lote_stall; Clones and constructed by Life Technologies.
//lote: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1537 tgtgcttatggctaccggaaatgcttggggaaaaagggcgagttaagaaagccacaaa 1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1657 atttccaaacttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatac 1716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1597 tccaagacccattgagaagtgggtgggaaataaggtaaaattttgaaccattcctagtc 1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1777 actogctagtcagtaaagatatttgaatatgtatcgtgcccctccggtgtctttgatca 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1897 cttactctgaaacatggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgcc 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1957 cctactgcaaatggcagttttaatcttatcttttggcttctgcagatggttgcaattgat 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2017 ccttaaccaataatggtcagtcctcatctgtcctgcttcataggtgccaccttgtgtg 2076
                                 DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://mage.lnl.gov
Plate: LLAM10401 row: n column: 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 61 TCCAAGACCCATTGAGAAGTGGGTGGGAAATAAGGTAAAATTTTGAACCATTCCCTAGTC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361 CTTACTCTGAAACATGGCCTGTTTGGGAGTGCGGGATTCAAAGGTGGTCCACCGCTGCC 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421 CCTACTGCAAATGGCAGTTTTAATCTTATCTTTTGGCTTCTGCAGATGGTTGCAATTGAT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                ttch 30.0%; Score 695.4; DB 10; Length 881; cal Similarity 97.7%; Pred. No. 4e-171; 769; Conservative 0; Mismatches 11; Indels 7;
                                                                                                                                                                           /organism-"Homo sapiens"
                                                                                                                       High quality sequence stop: 763.
Location/Qualiflers
                                                                                                                                                                                                                /clone="IMAGE:4514129"
/clone_lib="NIH_MGC_93"
                                                                                                                                                                                              /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
```

```
/clone_lib="NIH_mcc_v."
/tissue_type="adenocarcinoma"
/lab_host="H108 (phage-resistant)"
/note="Organ: colon: Vector: pCMV-SPORT6; Site_1: Not1;
/note="Organ: colon: Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sal1; Cloned unidirectionally. Primer: Oligo dT.
                                                                                                                                                                                                                                                                                                                                                                                                                                           linear EST 20-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostoml;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                        BE870911 1005 bp mRNA linear EST 20-OCT-20 601448862Fl NIH_MGC_65 Homo sapiens cDNA clone IMAGE:3852831 5',
2194 tiggiggg:ggigatatitgagaagataatcatigcttatgicaaatggagcigaatitga 2253
                                                                                                               1101 gatgacccgtgcctttatcacccatgctggttcccatggtgtttatgaaagcatatgcaa 1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1041 tettgegaacaacagatacttgttaagtggetaceceaaaacgatetggttaeec 1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1161 tggcgttcccatggtgatgatgatgccttgtttggtgatcagatggacaatgcaaagcgcat 1220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1221 ggagactaagggagctggagtgacctgaatgttctggaaatgacttctgaagatttaga 1280
                                                         661 -TGGTGGGTGGTGTATTCGAGAAGATAATCATTGTTTATGTCCAATGGAGCTGAATTTGA 719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 (bases 1 to 1005)

Nath-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC) Unpubl.shed (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 GATGACCCGTGCCTTTATCACCCATGCTTCCCATGGTGTTTATGAAAGCATATGCAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 TGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCACATGGACAATGCAAAGCGCAT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 TCTIGCGAACAACACGATACTIGTTAAGTGGCTACCCCAAAACGATCTGCTTGGTCACCC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 29.3%; Score 680.6; DB 10; Length 1005; Best Local Similarity 96.8%; Pred. No. 3.2e-167; Matches 737; Conservative 0; Mismatches 19; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           209 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Plate: LLAM9575 row: 1 column: 16
High quality sequence stop: 645.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                     1005 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="IMAGE:3852831"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BE8709.1.1 GI:10319687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Technologies.
268 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                     2314 tacaact 2320
                                                                                                                                                                                                                                                                                        777 TACAACT 783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3E8709
                                                                                                                                                                                                                                                                                                                                                                                  RESULT 10
BE870911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEATURES
```

us-09-835-082-1.rst

σ

q

á

δ

g δλ g

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             602385071F1 NIH_MGC_93 Homo sapiens cDNA clone IMAGE:4514129 5',
                                                                                                                                                                                                                                                                                        1725 aattaatcagccc-agagtgctttaaaaattctcttaaataaaaataatagactcgct 1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1904 tgaaacatggcctgtttgggagtgcgggattcaaaggtggtccaccgctgcccacctactg 1963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2024 caataatggtcagtcctcatctctgtcctgcttcataggtgccaccttgtgtgtttaaag 2083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2204 gigiatitigagaagataatcatigcitatgicaaaiggagcigaatitgataaaaaccca 2263
1547 gctaccggaaatgcttggggaaaaagggcg-agttaagaaagcccacaaatccaagacc 1605
                                                                                              1606 cattgagaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaa 1665
                                                                                                                                                                                            1666 cttgaaaacagaatca-gtgttaaattcattttattcttattaaggaaatactttgcata 1724
                                                                                                                                                                                                                                                                                                                                                                                      1784 agtcagtaaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgac 1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1844 atgtgccatttttcagaggacgtgcagacaggctggcattctagattacttttcttactc 1903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1964 caaatggcagttttaatcttatcttttggcttctgcagatggttgcaattgatccttaac 2023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2144 agaacagcatatgatttcttgctttggggaaaaagaatgatgctatgaaattggtggftg 2203
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 881)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                          758 ATTIGAGAAGTGGGTGGGAATAAAGGTAAAATTTGAACCATTCCCCAAGTCATTTCCCAA 699
                                                                                                                                                                                                                                      698 CIGGAAAACAGAAICAGGGGIAAAATICAITITAITCITAITAAGGAAATACTIGGCAIA 639
                                                                                                                                                                                                                                                                                                                                       518 ATGTGCCATTTTTCAGAGGACGTGCAGACAGGCTGGCATTCTAGATTACTTTTCTTACTC 459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  458 TGAAACATGGCCTGTTTGGGAGTGCGGGATTCAAAGGTGGTCCCACGGCTGCCCCTACTG 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158 GIGTATTIGAGAAGATAATCATIGCTTATGTCAAATGGAGCTGAATTIGATAAAAACCCA 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        881 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG289777.1 GI:13045907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG289777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BG289777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                ö
                                                                                                                                             g
                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                        tb24d12.x1 NCI_CGAP_Kid12 Homo sapiens cDNA linear EST 08-APR-1999 similar to gb:M57899 UDP-GLUCURONOSYLTRANSFERASE 1A PRECURSOR, AI307269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /note="Organ: kidney; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site_1: Not I: Site_2: ECO RI; Plasmid DNA from the normalized library NCI_CGAP_Kid5 was prepared, and ss circles were made in vitro. Following HAP purfication, this DNA was used as tracer in a subtractive hybridization reaction. The driver was PCR-amplified cDNAs from a pool of 5,000 clones made from the same library (cloneIDs 1323912-132831, 1471368-1472903 and 1492104-1493255). Subtraction by Bento Soares and M.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDNA Library Preparation: M. Bento Soares, Ph.D.
CDNA Library Arrayed by: Greg Lemon, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
www-bio.lln.gov/bbrp/image/image.html
Seq primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 818)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Robert Strausberg, Ph.D.
Email: cgapbs-rémail.nih.gov
Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael R.
Emmart-Buck, M.D., Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCI_CGAP http://www.ncbi.nlm.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                               660 GITITITICAAAAATGCCCTAGGAAATAGCCCTCTGAAATNCTCCAAAACACCTGTTACGG 719
                                                                                                740 agtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttggact 799
                                                                                                                                                                                                                         30.0%; Score 695.8; DB 9; Length 818;
95.9%; Pred. No. 3e-171;
Live 0; Mismatches 29; Indels 3; Gaps
  683 gttttttcaaaaatgccctag--aaatagcctctgaaattctcc-aaacacctgttacgg 739
                                                                                                                                             720 AGTATGATCTCTACAGCCACACATCAACTCGGCTCGTTGCGAACGGACTTGTCTTGGACT 779
                                                                                                                                                                                               800 atcccaaacccgtgatgcccaacatgatcttcattggtggtgtatcaac--tgccatcaggg 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone_lib="NCI_CGAP_Kid12"
/tissue_type="2 pooled tumors (clear cell type)"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      258 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence stop: 453.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="IMAGE:2055287"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      134 9
                                                                                                                                                                                                                                                                                                858 aaagccgttgcctatggaatttga 881
                                                                                                                                                                                                                                                                                                                          839 AAAGCCGTTGCCTATGGATTTGGA 862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fatima Bonaldo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AI307269.1 GI:4002458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 745; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Tumor Gene Index
Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                          AI307269/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
```

EST 21-FEB-2001

셤

qq

ò a

à

ò qq à q à P ò 8 à g õ g ò g ò 요 ò 셤

```
EST 25-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                603049004F1 NIH_MGC_116 Homo sapiens cDNA clone IMAGE:5189040 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300
                                                                                                                                                                                                                                                                                                  361 gacatttttgactta-tttttttcaaattgcaggagtttgtttaaagacaaaaattagt 419
                                                                                                                                                                                                                                                                                                                                                                                                 Catyctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaat 360
                                                                                                                                                                                                                                                 479 gcttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatacttt 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                599 tcttagggttctcagatgccatgactttcaaggaggaggtacggaaccac-atcatgcac 657
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ttggaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaa 717
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  718 attetecaaacacetgtt-acggagtatga---tetetacagecacacateatttggtt 773
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         774 gttgcgaacgg--actttgttttggactatcccaaacccgt-gatgcccaacatgatctt 830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            787 GITGCGAACGGGACCIIGGIIGGGAACIAICCAAAACCCGIGGAIGCCCAACAIGAICII 846
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 (bases 1 to 884)
NIH-WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Life Technologies, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DNA Sequencing by: Incyte Genomics, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 831 cattggtggtatcaactgccatcagggaaa 860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    847 CATGGGAGAACAACTGTCATTCCGTGAAA 876
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    884 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BI762347.1 GI:15753925
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
BI762347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BI762347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BI762347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COMMENT
```

Clone distribution: MGC clone distribution information can be

```
/note="Organ: pooled colon, kidney, stomach; vector: pcMv-SpORT6, Site_1: NoT1; Site_2: EcoNV (destroyed); RNA source anonymous pool of 3 colons, age 26 yo male, 49 yo female, 71 yo male colon; 46 yo male kidney, and pool of stomachs, 62 yo male and 70 yo female. Library is oligo-dr primed and directionally cloned (EcoRv site is destroyed upon cloning). Average insert size 1:4 kb, library is normalized and enriched for full-length clones and was constructed by C Gruber (Invitrogen). Research Genetics tracking code
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 CCGAGGCAGGGAAGCTACTGGTAGTGCCCATGGATGGGAGCCACTGGTTCACCATGAGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               86 ccgaggcagggaagctactggtagtgcccatggatgggagccactggttcaccatgaggt 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 206 gttggcaactggaagatcactgaattgcacagtgaagacttattcaacttcatataccc 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  326 gaagtatatatattetetattaatgggtteatacaatgaeatttttgaettatttttteaa 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  386 attgcaggagtttgtttaaagacaaaaattagtagaatacttaaaggagattcttttg 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    361 ATTGCAGGAGTTTGTTTAAAGACAAAAATTAGTAGAATACTTAAAGGAGAGTTCTTTTG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    446 atgcagtgt:ttctcgatccttttgataactgtggcttaattgttgccaaatatttctccc 505
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 42; Indels 10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            624 tttcaaggagagagtacggaaccacatcatgcacttgg-aggaacatttattatgccacc 682
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26 gcacagggtggaccagccccttcctctatgtgtgtgtgtctgctgctgacctgtggctttg 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GCACAGGGMGGACCAGCCCCTTCCTCTATGTGTGTGTCTGCTGCTGTGACCTGTGGCTTTG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        181 GTTGGCAACTGGGAAGATCACTGAATTGCACAGTGAAGACTTATTCAACTTCATATAACC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 30.5%; Score 707.4; DB 10; Length 884; Best Local Similarity 94.0%; Pred. No. 2.8e-174; Matches 812; Conservative 0; Mismatches 42; Indels 10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                l others
found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLAM11472 row: h column: 01
                                                                                                                                                                                                                                                                                                                                                                                                                                         023. Note: this is a NIH_MGC Library.
207 c 210 q 253 t l ot
                                                                                                                          /organism="Homo sapiens"
                                                                                                                                                                                      /clone_lib="NIH_MGC_116"
                                                               High quality sequence stop: 796.
Location/Qualifiers
                                                                                                                                             /db_xref="taxon:9606"
/clone="IMAGE:5189040"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                210 g
                                                                                                                                                                                                            /lab_host-"DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                              213 a
                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
```

```
/clone_lb="NiH_MGC_93"
/tissue_type="transitional cell papilloma, cell line"
/lab_host="NiH_MGC_93"
/note="organ: bladder: Vector: pCMV-SPORT6; Site_1: NotI;
Site_2: Sall; Cloned unidirectionally; oligo-dT primed.
Average insert size 1,7 kb. Library enriched for full-length clones and constructed by Life Technologies.
full-length clones and constructed by Life Technologies.
a 155 c 202 g 266 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1747 ttaaaaaattotottaaataaaaataatagaotogotagtoagtaaagatattgaatat 1806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2047 tgtcctgcttcataggtgccaccttgtgt-gtttaaagaagggaagctttgtacctttag 2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1447 gacctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtg 1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1687 aaattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtgct 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1807 gtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggacgt 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1867 gcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttgggagt 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1987 ttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatctc 2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2106 agtgtaggtg-aaatgaatgaatggcttggagtgcactgagaacagcatatgatttct-t 2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1507 ctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgggg 1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1627 taaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgtt 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       301 TIAAAAATTCICTTAAATAAAATAATAATAGACTCGCTAGTCAGTAAAGATATTTGAATAT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               361 GTATCGTGCCCCCTCCGGTGTCTTTGATCAGGATGACATGTGCCATTTTTCAGAGGACGT 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541 TITIGGCTICTGCAGATGGTTGCAATTGATCCTTAACCAATAATGGTCAGTCCTCATCTC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601 TGTCCTGCTTCATAGGTGCCACCTTGTGTGGTTTAAAGAAGGGAAGCTTTGTACCTTTAG 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 CIGACAGIGGCCTICATCACCTITAAAIGTIGIGCTIAIGGCIACCGGAAAIGCTIGGGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GACCICACCIGGIACCAGIACCATICCIIGGACGIGATIGGITICCICIIGGCCGICGIG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           31.1%; Score 722.4; DB 10; Length 882; 94.5%; Pred. No. 3.3e-178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
found through the I.M.A.G.E. Consortium/LLNL at: http://inage.llnl.gov http://inage.llnl.gov http://inage.llnl.gov High quality sequence stop: 746.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 41;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                    /organism="Homo sapiens"
                                                                                                                                                                                                  /clone="IMAGE:4516403"
                                                                                                                                                                            /db_xref="taxon:9606"
                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 792; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                               259 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
```

```
/note-Torgan: pooled colon, kidney, stomach; Vector:
pcMv-Sporn6; Site_1: Not!; Site_2: BcoRV (destroyed); RNA
source anonymous pool of 3 colons, age 26 yo male, 49 yo
female, 71 yo male colon, 46 yo male kidney, and pool of 2
stomachs, 62 yo male and 70 yo female. Library is
oligo-dr primed and directionally cloned (EccRV site is
destroyed upon cloning). Average insert size 1.4 kb,
insert size range 1.3 kb. Library is normalized and
enriched for full-length clones and was constructed by C
gruber (Invitrogen). Research Genetics tracking code
                                                                                                                                                                                                                                                                                EST 25-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutherla; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                          BI759297 876 bp mRNA linear EST 25-SEP-2
603042939Fl NIH_MGC_116 Homo sapiens cDNA clone IMAGE:5183433 5'
2164 gctttggggaaaaagaatgatgctatgaaattggtggtggtgtatttgagaagataatc 2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NIH-WGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                 721 GCTTTGGGGAAAAAAAATGATGCTATGGAAATTGGGGGGTGGTGGATTGGAGAAATATC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          31.1%; Score 720.8; DB 10; Length 876;
94.6%; Pred. No. 8.6e-178;
Live 0; Mismatches 37; Indels 10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  7 CICAGCIGCAGIICICIGAIGGCIIGCACAGGGIGGACCAGCCCCCTICCICIAIGIGIG 66
                                                                                                  2224 attgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtg 2281
                                                                                                                              Contact: Robert Strausberg, Ph.D.
Email: cgapbs.r@mail.nth.gov
Tissue Procurement: Life Technologies, Inc.
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLAM11457 row: n column: 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               023. Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone_lib="NIH_MGC_116"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         High quality sequence stop: 735.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone="IMAGE:5183433"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /lab_host="DH10B
                                                                                                                                                                                                                                                                                                                                                                                BI759297.1 GI:15750875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Matches 823; Conservative
                                                                                                                                                                                                                                                                                                                                 mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                       human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                 RESULT (
BI759297
                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
     õ
```

õ QQ 윱

õ

```
1607 attgagaag:gggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaac 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BG291462.1 GI:13049372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA sequence.
BG291462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG291462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BG291462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                             оp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_type="transitional cell papilloma, cell line"
//ab.host="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost-"blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="blost="
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      60:418710F1 NIH_MGC_93 Homo sapiens cDNA clone IMAGE:4525755 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1487 gtttcctcttggccgtcgtgctgacagtggccttcatcaccctttaaatgttgtgcttatg 1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1547 gctaccggaaatgcttgggggaaaaagggcgagttaagaaagcccacaaaatccaagaccc 1606
    1676 gaatcagtgttaaattcattttattcttattaaggaaatactttgcataaattaatcagc 1735
                                            1736 cccaçagtgctttaaaaaattctctta--aataaaaataatagactcgctagtcagtaaa 1793
                                                                                                                                                                                                                           1748 TCAGCACATTTAAAAATAATAATAATAACAATCTAATTGCTGGCCACACCCATCAGGGAA 1807
                                                                                                                                                                                                                                                                                                    1794 gatatittgaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatt 1853
                                                                                                                                                                                                                                                                                                                                                                             1808 GGTTCTAGTATATGTGATGTG-CTTTTCCAGTATCTTCAGTCTAGACAACTCTTGCCATC 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tissue Procurement: ATCC CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Cione distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NIH-WGC http://mgc.nci.nih.gov/.
Mational institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1991)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28; Indels 6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GTTTCCTCTGGGCCGTCGTGCTGACAGTGGCCTTCATCACCTTTAAATGTTGTGCTTATG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                31.9%; Score 741.2; DB 10; Length 868; 95.9%; Pred. No. 3.8e-183; tive 0; Mismatches 28; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1867 IGT-J'GTAATTTACAGAAGTCTGGCACTCTGCTTT 1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1854 tttcagaggacgtgcagacaggctggcattctagatt 1890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Plate: LLAM10432 row: c column: 04
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /clone_lib="NIH_MGC_93"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      High quality sequence stop: 785.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="IMAGE:4525755"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          868 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          187 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BG402908.1 GI:13296356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 868)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  151 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 804; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      258 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BG402908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BG402908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 882)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   602387347F1 NIH_MGC_93 Homo sapiens cDNA clone IMAGE:4516403 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1667 ttgaaaacayaatcagtgttaaattcattttattcttattaaggaaatactttgcataaa 1726
                                                                                                                                                                                                          2205 tgta--tttgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaacc 2262
                                                                                                                                   1727 ttaatcagcoccagagtgotttaaaaaattotottaaataaaaaataatagactogotagt 1786
                                                                                                                                                                                                                                                                                     1847 tgccattttttcagaggacgtgcagacaggctggcattctagattactttcttactcga 1906
                                                                                                                                                                                                                                                                                                                                                                                                                                         1967 atggcagttitaatcttatcttttggcttctgcagatggttgcaattgatccttaaccaa 2026
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                                                           181 TTGAAAACAGAATCAGTGTTAAATTCATTTTATTCTTATTAAGGAAATACTTTGCATAAA 240
                                                                                                                                                      661 ACAGACATATGATTTTCTTGCTTTGGGGAAAAGAATGATGCTATGAAAATGGTGGTGG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Robert Strausberg, Ph.D.
```

```
ö
                                                                                                                     ŏ
                                                                                                                                                           g
                                                                                                                                                                                                  å
                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      QΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ΩŸ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                       /db_xref="GI:12832754"
/translation="MDTGLCVPLRGISGLLLLLCALPWAEGAKVLVLPMEGSQWLSMR
DVVRELHARGHQTVVLASEVTVHIRGEDFETHETARFETEEVQGELSDIEKTFRT
DVVRELHARGHQTVVLASEVTVHIRGEDFETHETAFFETHERVGETHETAFFETHERV
                                                                        /tissue_type="kidney"
/clone_llb="RIKEN full-length enriched mouse cDNA library"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                               QHEVKAFFETTASIRNFEDLXSNSCIALLHNKMLIQQLNSSFFDVILTDPIFPCGAVL
AKYLQIPAVFILRSLSCGIEYEATQCPNPSSYIPNLITRLSDHMDFLQRVQNMLYYLV
                                                                                                                                                                                                                                                                                                                                                                                                      LKYICKLSITPYESLASELLQREVSLVEVLSHASVWLFRCDFVLDYPRPIMONNYFIG
GINCYTKKPLSQEFEAYVNASGEHGIVVFSLGSMVSEIPEKKAMEIAEALGRIPQTVL
WRYTGTRPSNLAKNTILVKWLPQNDLLGHPKTRAFITHSGSHGIYEGICNGVPMVMP
                                                                                                                                                                                                                                                                                                                                                                                                                                                            LFGDQMDNAKRMETRGAGVTLNVLEMTADDLENALKTVINNKSYKENIMRLSSLHKDR
PIEPLDLAVFWVEYVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAIVLTVVFIVFK
                                                                                                                                                                                                              /note="UDP-glucuronosyltransferase 1 family, member 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               59 tgtgtctgctgatgacctgtggctttgccgaggcagggaagctactggtagtgcccatgg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        119 atgggagccactggttcaccatgaggtcggtggtggagaaactcattctcaggggggatg 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                179 aggtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacag 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     296 ttgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcat 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74 IGCICCIGCIGIGICCCTGCCCTGGGCIGAAGGIGCAAAAGIGCTGGIGITACCCAIGG 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       194 AGACTGTGGTCCTGGCTTCAGAGGTGACTGTGCACATCAAAGGAGAAGACTTCTTCACCC 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   314 TIGAGAAGACCITIAAAACACAATTITGIGAAGGCCITITITGAAACTACAGCATCIA 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                416 tagtagaatacttaaaggagagttcttttgatgcagtgtttctcgatccttttgataact 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               434 TGATCCAGCAACTGAATTCCAGTTTTTTGATGTGATCTTAACAGACCCCATTTTCCCCT 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               134 AGGCAGCCAGTGGCTGAGCATGAGGGATGTTGTGCGGGAGCTCCACGCCCGAGGTCACC 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             239 tgaagacttattcaacttcatataccctggagg---atctggaccgggagttcaaggctt 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     374 TAAGAAACTITITIGACCTCTACTCAAATTCTTGTATAGCTTTATTGCACAATAAGATGC 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 3.1e-193;
0; Mismatches 613; Indels 13; Gaps
                                                                                                                                                                                                                                 source:MGD, source key:MGI:98898, evidence:ISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       33.6%; Score 780.2; DB 11; Length 2202; 65.9%; Pred. No. 3.1e-193;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               606 t
/db_xref="MGD:MGI:1910585"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CCAYGCRKCFGGKGRVKKSHKSKTH"
                                                                                                                                                                                                                                                                                     /protein_id="BAB22243.1"
/db_xref="G1:12832754"
                  /db_xref="taxon:10090"
/clone="0610013P07"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          514 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="putative"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note="putative"
                                                                                                                                                       /gene="Ugtlal"
28. .1629
                                                                                                                                                                                            /gene="Ugtla1"
                                                         /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          514 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 65.9%
Matches 1211; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          568 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                      gene
                                                                                                                                                                       CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
```

476 gtggcttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatac 535

ŏ

= = = =

```
956 agaagaaagctatggcaattgctgatgctttgggcaaatccctcagacagtcctgtggc 1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1076 cccaaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttccc 1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    974 AGAAGAAAGCCATGGAAATTGCTGAGGCTTTGGGCAGAATTCCTCAGACGGTCCTGTGGC 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1016 ggtacactggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctac 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1136 atggtgtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtg 1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1154 ATGGTATTTATGAAGGAATATGCAATGGAGTTCCGATGGTGATGATGACCCCTATTTGGCG 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1256 tggaaatgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaagtt 1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1094 CCCAAAATGATCTGCTTGGTCATCCAAAGACTCGGGCATTCATCACACACTCTGGCTCCC 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1196 atcagatggacaatgcaaagcgcatggagctaagggagctggagtgacctgaatgttc 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1214 ATCAGATGGACAATGCCAAGCGCATGGAAACTCGGGGAGCTGGGGTGACCCTGAATGTCC 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1274 TTGAAATGACTGCTGATGATTTGGAAAATGCCCTTAAAACTGTCATCAACAACAAGAGGT 1333
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1316 acaaggagaacatcatgcgcctctccagccttcacaaggaccgccggtggagccgctgg 1375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1436 ccgcagcccacgacctcacctggtaccagtaccattccttggacgtgattggtttcctct 1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1496 tggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccgga 1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1514 TGGCCATTGTGTTGACAGTGGTCTTCATTGTCTTTAAATGTTGTGCCTATGGTGCTGCCGGA 1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1556 aatgettggggaaaaaaggggggggttaagaaageeeacaaateeaagaeeeattgagaag 1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1574 AATGCTTTGGGGGAAAGGGGGGGAGTGAAGAAATCACACAAAATCCAAGACCCATTGAGAAG 1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1616 tgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaaca 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1634 TGGGGGGAAGTGAAGGAATTAGTTCATTATCTGATCAGTTGAAACTTGGA----- 1688
596 ttctcttagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgc 655
                                                                                                                                                614 TACTCACAAGGCTTTCTGACCACATGGACTTCCTGCAAAGGGTCCAGAACATGCTGTACT 673
                                                                                                                                                                                                                        656 acttggaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctg 715
                                                                                                                                                                                                                                                                                                                                                                                                                                                734 AGCITITGCAGAGAAGTATCCTTAGTGGAGGTTCTCAGCCATGCATCGTGTGGCTGT 793
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    836 gtggtatcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatg 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    674 ATCTGGTCCTGAAGTACATTTGCCGTTTATCAATCACTCCCTATGAAAGCCTGGCCTCTG 733
                                                                                                                                                                                                                                                                                                                                                                            116 aaattotocaaacacctgttacggagtatgatototacagccacacatcaatttggttgt 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            776 tgcgaacggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattg 835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                854 GGGGCATAAACTGTGTTACCAAGAAGCCCCTCTCAGGAATTTGAAGCCTATGTCAACG 913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    896 cttctggagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccag 955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

Carnincl, P. High-efficin High-efficin 9979253 10349636 10349636 Carnincl, P. Itoh, M., Ko Normalizati, Prepare follogenome Re 20499374 11042159 3 (sites) Shibata, K., Konnon	Sumi. N. A Sumi. N. A Yamamoto, R. Youeda, Y Okazaki, Y Okazaki, Y Genome Res. 20530913 107661 4 (Sites) The RIKEN G FANTOM CONS. FANTOM CONS.	S (bases 1 Arakawi J., Arakawi J., Arakawi J., Garninci, P. Hara, A. Ha Hume, D. Ha Hume, D. Ha Kuribara, C. Numazaki, R. Satto, H., S Satto, H., S Satto, H., S Schrimi, L.,	Tanaka,T., Tanaka,T., Hayashizaki Direct Subm Submitted (Physical an Exploration RIKEN 20Koh READAR 20Koh FRX.B1.45-5/ Fax.B1.45-5/ Flease visi	
AUTHORS TITLE JOURNAL MEDLINE PUBMED REFERENCE AUTHORS TITLE JOURNAL MEDLINE PUBMED REFERENCE AUTHORS	TITLE JOURNAL MEDLINE PUBMED REFERENCE AUTHORS TITLE JOURNAL	REFERENCE AUTHORS	TITLE JOURNAL COMMENT	FEATURES
taccccaaacgatctgcttggtcacccgatgacccgtgctttatcacccatgctggtt 1132	1313 gttecaaggagaacatcatgcgcctctcacaaggaccgccggtggagccgc 1372	ggaaatgcttggggaaaaagggcgagttaagaaagccacaaatccaagacccattgag 1612	1733 agcccagagtgctttaaaaaattctcttaaataaaaataatagactcgctagtcagt 1790	AK002629 AK002629 AK002629 AKO02629 AKO02629 AKO02629 AKO02630 AKO03630 AKO02630 AKO03630 AKO02630 AKO026
0y 1073 0b 1180 0y 1133 0y 1193 0y 1193 0b 1300 0y 1253	0Q 1313 0D 1420 0Q 1373 0Q 1433 0D 1540 0Q 1433 0D 1540	Qy 1553 Db 1660 Qy 1613 Db 1720 Qy 1673 Db 1778	Oy 1733 Db 1834 Oy 1791 Db 1894 Oy 1851 Db 1953	RESULT 3 AKO02629 LOCUS DEFINITION ACCESSION VERYWORDS SOURCE ORGANISM

```
13. Alzawa, K. Akahira, S., Akimura, T., Aono, H., Arai, A., a.T., Baldarelli, R., Bono, H., Brownstein, M., Bult, C., Ci.P., Fukuda, S., Fukunishi, Y., Furuno, M., Hanagaki, T., Hayatsu, M., Hill, D., Hiramoto, K., Hirada, T., Hori, F., Itoh, M., Izawa, M., Kasukawa, T., Kawai, J., Kojima, Y., Konoda, M., Koyas, M., Kasukawa, T., Kawai, J., Kojima, Y., Konod, H., Koyda, M., Koyas, S., Kono, H., Koyda, M., Okazaki, T., Miyazaki, A., Nishi, K., Nomura, K., Hi, R., Ohno, M., Okazaki, Y., Okido, T., Owa, C., Quackenbush, J., Hi, Saito, R., Sahai, C., Sakai, K., Sano, H., Sasaki, D., L., Shibata, K., Shibata, X., Shinagawa, A., Shiraki, T., Y., Suzuki, H., Tagami, M., Muramatsu, M., and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Exbary was prepared and sequenced in Mouse Genome opedia Project of Genome Exploration Research Group in Riken c Sciences Center and Genome Science Laboratory in RIKEN.

Sciences Center and Genome Science Laboratory in RIKEN.

GRAGAGAGGGGGCAGCGGAGTTTTTTTTTTTTTTTVTTYN 3', CDNA was ed by using trebalose thermo-activated reverse transcriptase basequently enriched for full-length by cap-trapper. CDNA went in one round of normalization to Rot = 5.0. Second strand CDNA epared with the primer adapter of sequence[5', cDNA was danaged with the primer adapter of sequence[5', cDNA was danaged with XhoI and SStI. Cloning sites, 5' end: SStI; 3' end:
                                                                                                                                                                                                                                                                P., Shibata,Y., Hayatsu,N., Sugahara,Y., Shibata,K.,
(onno,H., Okazaki,Y., Muramatsu,M. and Hayashizaki,Y.
Lion and subtraction of cap-trapper-selected cDNAs to
and cDNA libraries for rapid discovery of new genes
5. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Aityama, J. Alzawa, K., Nagaoka, S., Sasaki, N., Carninci, P., Aityama, J., Nashi, K., Kitsunal, T., Tasahiro, H., Itoh, M., Ishi, Y., Nakamura, S., Hazama, M., Nishine, T., Harada, A., R., Matsumoto, H., Sakaguchi, S., Ikegami, T., Kashiwagi, K., S., Inoue, K., Togawa, M., Ohara, E., Matshiki, M., S., Ishikawa, T., Ozawa, K., Tazwa, M., Ohara, E., Matshiki, M., Muramatsu, M., Inoue, Y., Kira, A. and Hayashizaki, Y. egrated sequence analysis (RISA) system-384-format s., 10 (11), 1757-1771 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and Chemical Research (RIKEN), Laboratory for Genome on Research Group, RIKEN Genomits Sciences Center (GSC), 330-0045, Japan (E-mail:genome-reségsc.riken.go.jp, //genome-reségsc.riken.go.jp, 7/genome-gsc.riken.go.jp, Tel:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Genome Exploration Research Group Phase II Team and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (10-JUL-2000) Yoshihide Hayashizaki, The Institute of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      it our web site (http://genome.gsc.riken.go.jp/) for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        annotation of a full-length mouse cDNA collection
P. and Hayashizaki, Y. Siency full-length cDNA cloning mol. 303, 19-44 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ocation/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      strain="C57BL/6J"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     , 685-690 (2001)
1 to 2202)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       mission
```

```
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. COROSTIUM/LIM. At: http://lmage.llnl.gov Series: IRAK Plate: 18 Row: e Column: 4
This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 801898 This clone has the following problem: incomplete processing.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              linear HTC 20-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /tissue_type="Mammary tumor. WAP-TGF alpha model. 7 months
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mammalia; Butheria; Rodentla; Sciurognathi; Muridae; Murinae; Mus.
1 (bases 1 to 2306)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            contact: amadan@systemsbiology.org
Anup Madan, Rachel Dickhoff, Jessica Fahey, Stephanie Ford, Julia
Greene, Mark Ketteman and Anuradha Madan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Submitted (15-AUG-2001) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         iene Collection (MGC), Cancer Genomics Office, National Cancer
institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                         2048 AAATGGCAGTTTTAATCTTATCTTTTGGCTTCTGCAGATGGTTGCAATTGATCCTTAACC 2107
                                                       2025 aataatggtcagtcctcatctctgtcctgcttcataggtgccaccttgtgtgtttaaaga 2084
                                                                                 2205 tgtatttgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaa 2264
                                                                                                                                                                                                                                                                                                                                                                                                                              2288 IGTATTTGAGAAGATAATCATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCAA 2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: gapbs.rietr.com.
Email: gapbs.riemail.nih, gov
Tissue Procurement: Lothar Hennighausen Ph.D., Robin Humphreys
CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: Institute for Systems Biology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC012716 2306 bp mRNA linear HTC 20-AUG-
Mus musculus, Similar to UDP-glucuronosyltransferase 1 family,
member 1, clone IMAGE:3993384, mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NIH-MGC Project URL: http://mgc.nci.nih.gov
Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note="Vector: pCMV-SPORT6"
559 c 528 g 625 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="NCI_CGAP_Mam5"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Mus musculus"
/db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /clone="IMAGE:3993384"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /www.systemsbiology.org
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      tissue.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BC012716.1 GI:15215247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gross
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        594 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REMARK
COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BC012716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                 ò
```

```
953 cagagaagaaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgt 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      56 gtgtgtgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgccca 115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 356 acaatgacatt---tttgacttatttttttcaaattgcaggagtttgtttaaagacaaaa 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         893 atgettetggagaacatggaattgtggttttetetttgggatcaatggteteagaaatte 952
                                                                                                                                             163 GGGTTTCTCTTCCTAGTGCTTGGGCCTCAGTTCTAGGTGACAAGCTGCTGGTGGTCCCCC 222
                                                                                                                                                                                                116 tggatgggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggc 175
                                                                                                                                                                                                                                             223 AGGATGGAAGCCACTGGCTTAGCATGAAGGAGATAGTGGAACATCTCAGTGAACGAGGAC 282
                                                                                                                                                                                                                                                                                              176 atgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgca 235
                                                                                                                                                                                                                                                                                                                                           283 ATGACATTATGGTCCTAGTGCCAGAAGTCAATTTGCTTTTGGGAGAATCCAAATACTACA 342
                                                                                                                                                                                                                                                                                                                                                                                                 236 cagtgaagacttattcaacttcatataccctggaggatctggaccgggagttcaaggctt 295
                                                                                                                                                                                                                                                                                                                                                                                                                                              343 GGAGGAAAATCTTCTCAGTTACCTACAGCCTAGAGGAACTACAGACCCGTTTTCGCACCT 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 403 TIGGAAACAACCACTITCTICCCAGIGCCGCCCTGAIIGGICCTCTAAGAGAGAGIACAGA 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               413 aattagtagaatacttaaaggagagttcttttgatgcagtgtttctcgatccttttgata 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               523 CCACCCTCAGCTTCCTCAGGGAGAACAAGTTTGATGCTCTGTTCACAGACCCAGCCATGC 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            583 CCTGTGGTGTGATCCTGGCTGAGTATCTCAACCTGCCCTCTGTGTCTACCTCTTCAGAGGTT 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               533 tactttgccactatcttgaagaaggtgcacagtgccctgctcctctttcctatgtcccca 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             643 TCCCATGCTCTCTGGAACACATGCTTGGTCAAAGCCCCAAGCCCTGTGTGTCTACGTTCCCA 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          703 GATTCTACACCAAATTCTCAGACCACATGACATTTCCCCAACGGCTGGCCAACTTTATTG 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          653 tgcacttggaggaacatttattgccaccgtttttcaaaaatgccctagaaatagcct 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           763 TTAACATCTTGGAAAACTACCTATATTATTGTCTGTATTCAAAGTATGAAATCATTGCCT 822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           713 ctgaaattctccaaacacctgttacggagtatgatctctacagccacacatcaatttggt 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        823 CAGACCTCCTCAAGAGAGATGTCTCCTACCTTACA---CCAGAATTCTCTGTGGC 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           773 tgttgcgaacggactttgttttggactatcccaaacccgtgatgcccaacatgatcttca 832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           833 ttggtggtatcaactgccatcagggaaagccgttgcctatggaatttgaagcctacatta 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           940 TTGGAGGATCAACTGTAAGAAGAAGAGGAAAGCTGACTCAGGAATTTGAAGCCTATGTCA 999
                                                     Gaps
34.0%; Score 789.6; DB 11; Length 2306; 66.6%; Pred. No. 1.1e-195;
                                                0; Mismatches 599; Indels 16;
                                                Matches 1225; Conservative
                        Best Local Similarity
  Query Match
                                                                                                                                                                                                                                        g
                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                           δy
                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              QΫ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
```

```
ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107 tagtgcccatggatgggagccactggttcaccatgaggtcggtggtggagaaactcattc 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  188 TGGTCCCTCAGGACGAAGCCACTGCCTTAGTATGAAGGATATAGTTGAGGTTCTCAGTG 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     167 tcagggggcatgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   227 tgaattgcacagtgaagacttattcaacttcatataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            308 AATACTACACAAGAAAATCTATCCAGTGCCGTATGACCAAGAAGAGCTGAAGAACCGTT 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            428 GTACAGGAATAACATGATTGTTATTGGCCTGTACTTCATCAACTGCCAGAGCCTCCTGCA 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             405 agacaaaaattagtagaatacttaaaggagagttcttttgatgcagtgttctcgatcc 464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        525 caggggaatactttgccactatcttgaagaaggtgcacagtgccctgctcctttccta 584
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    608 CAGGGGTTTTCCGTGTTCCCTGGAGCATACATTCAGCAGAAGCCCAGACCCTGTGTCCTA 667
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                585 tgtccccagaattctcttagggttctcagatgccatgactttcaaggagagagtacggaa 644
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            668 CATTCCCAGGTGCTACACAAAGTTTTCAGACCACATGACTTTTTCCCAACGAGTGGCCAA 727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                645 ccacatcatgcacttggaggaacatttattatgccaccgttttttcaaaaatgccctaga 704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         728 CTTCCTTGTTAATTTGTTGGAGCCCTATCTATTTATTGTCTGTTTTCAAAGTATGAAGA 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           705 aatagoototgaaattotocaaacacotgttacggagtatgatetetacagccacacate 764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         788 ACTCGCATCAGCTGTCCTCAAGAGAGATGTGGATATAATCACCTTATATCAGAAGGTCTC 847
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        765 aatttggttgttgcgaacggactttgttttggactatcccaaacccgtgatgcccaacat 824
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       848 TGTTTGGCTGTTAAGATATGACTTTGTGCTTGAATATCCTAGGCCGGTCATGCCCAACAT 907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           825 gatcttcattggtggtatcaactgccatcagggaaagccgttgcctatggaatttgaagc 884
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     885 ctacattaatgcttctggagaacatggaattgtggttttctctttgggatcaatggtctc 944
                                                                                                                                                                                                                                                                                                            Pred. No. 0;
0; Mismatches 394; Indels 2; Gaps
                                                                                                                                                                                                                                                                                                                                                                                47 ttcctctatgtgtgtgtctgctgctgacctgtggctttgccgaggcagggaagctactgg 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248 ACCGSGGTCATGAGATTGTAGTGGTGGTGCCTGAAGTTAATTTTGCTTTTGAAAGAATCCA 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               548 AGCCTTACCCTGTGGGGTGATCCTGGCTGAGTATTTGGGCCTACCATCTGTGTACCTCTT 607
                                                                                                                                                                                                                                                                                                                                                                                                                         128 TITCIGCAGGGTTITCTICTIAGCACTITGGGGCATGGTTGTAGGTGACAAGCTGCTGG 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                287 tcaaggettttgcccatgctcaatgg--aaagcacaagtacgaagtatatattctctatt 344
                                                                                                                                                                                                                                                                                  70.3%; Score 1631.6; DB 11; Length 2450; 82.6%; Pred. No. 0;
                                                      /clone="IMAGE:3854370"
/tissue_type="Colon, adenocarcinoma"
/clone_lib="NIH_MGC_65"
/lab_host="Nettor: pcMV-SPORT6"
/note="Vector: pcMV-SPORT6"
                    /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                              Matches 1880; Conservative
                                                                                                                                                                                                                                                                                                            Similarity
                                                                                                                                                                                          669 a
                                                                                                                                                                                                                                                                                  Query Match
source
                                                                                                                                                                                     BASE COUNT
                                                                                                                                                                                                                  ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

```
1785 gtcagtaazgatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgaca 1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                1245 octgaatgttctggaaatgacttctgaagatttagaaaatgctctaaaagcagtcatcaa 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1365 ggagccgctggacctggccgtgttctgggtggagtttgtgatgaggcacaagggcgcc 1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1508 ACACCTGCCCCCCCCCCCCCCCCCCCTCACCTGCTACCATACCTTGGACGTACTTTCTTGATT 1567
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1688 CCATTGAGAAGTGGGTGGGAAATAAGGTAAATTTTTGAACCATTCCCTAGTCATTTCCAA 1747
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1665 acttgaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcata 1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1845 tgtgccatttttcagaggacgtgcagacagctggcattctagattactttcttactct 1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         gaaacatgccctgtttgggagtgcgggattcaaaggtggtcccaccgctgccctactgc 1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1988 GAAACATGGCCTGTTTGGGAGTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCCTACTGC 2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1965 aaatggcagttttaatcttatcttttggcttctgcagatggttgcaattgatccttaacc 2024
                    968 CTACATTAATGCTTCTGGAGAACATGGAATTGTGGTTTTCTCTTTGGGATCAATGGTCTC 1027
                                                                   945 agaaattccagagaaagactatggcaattgctgatgctttgggcaaaatccctcagac 1004
                                                                                               1005 agtectgtggggggtacactggaaceegaceategaatettgegaacaacaegataettgt 1064
                                                                                                                                                                                                        1065 taagtggctaccccaaaacgatctgcttggtcacccgatgacccgtgcctttatcaccca 1124
                                                                                                                                                                                                                                                                                                  1148 TAAGTGGCTACCCCAAAACGATCTGCTTGGTCACCCGATGACCCGTGCCTTTATCACCCA 1207
                                                                                                                                                                                                                                                                                                                                             1125 tgctggttcccatggtgtttatgaaagcatatgcaatggcgttcccatggtgatgatgc 1184
                                                                                                                                                                                                                                                                                                                                                                                       1208 TGCTGGTTCCCATGGTGTTTATGAAAGCATATGCAATGGCGTTCCCATGGTGATGATGCC 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                    1185 cttgtttggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtgac 1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1328 CCTGAATGITCTGGAAATGACTTCTGAAGATTTAGAAAATGCTCTAAAAGCAGTCATCAA 1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1305 tgacaaaagttacaaggagaacatcatgcgcctctccagccttcacaaggaccgccggt 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1448 GGAGCCGCTGGACCTGGCCGTGTTCTGGGTGGAGTTTGTGATGAGGCACAAGGGCGCGCC 1507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acacetgcgccccgcagcccacgacctcacetggtaccagtaccattccttggacgtgat 1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1485 tggtttcctcttggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgctta 1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1605 ccattgagæagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaa 1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1748 ACTTGAAARCAGAATCAGTGTTAAATTCATTTTATTCTTATTAAGGAAATACTTTGCATA 1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1725 aattaatce.gccccagagtgctttaaaaaattctcttaaataaaaataatagactcgcta 1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1868 GTCAGTAAA.GATATTTGAATATGTATCGTGCCCCCTCCGGTGTCTTTGATCAGGATGACA 1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1928 TGTGCCATTTTTCAGAGGACGTGCAGACAGGCTGGCATTCTAGATTACTTTTCTTACTCT 1987
1905
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                              셤
                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                  셤
```

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM nucleic - nucleic search, using sw model

(without alignments)
6494.048 Million cell updates/sec August 21, 2002, 02:43:12; Search time 4821.79 Seconds Run on:

US-09-835-082-1 Title:

1 ctcagctgcagttctctgat......ttctgatgtttcctacaact 2320 Perfect score: Sequence:

IDENTITY_NUC Scoring table:

Gapop 10.0 , Gapext 1.0

27472414 Total number of hits satisfying chosen parameters:

13736207 segs, 6748477542 residues

Searched:

Minimum DB seq length: 0
Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

EST:* Database :

em_gss_inv:* em_gss_hum:* em_gss_pln:* em_esthum:* em_estin:* em_estov:* em_estpl:* em_estba:* em_estmu:* em_estro:* gb_est2:* qb_htc:* qb_est1:* dp_gss:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

em_gss_vrt:*

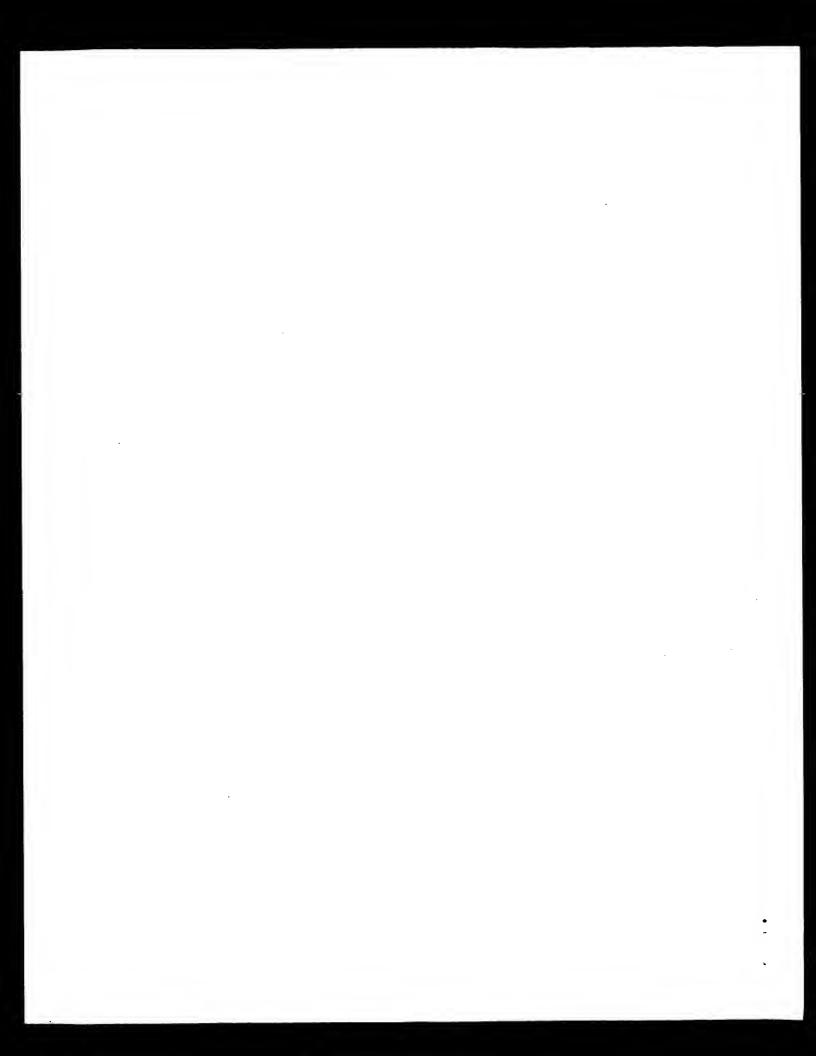
SUMMARIES

AI831562 wj39b01.x BG424452 602447772 BG469506 602532818 BG400591 602464244 BC012716 Mus muscu AK002629 Mus muscu BI762347 603049004 AI307269 tb24d12.x BG289777 602385071 BC011409 Homo sapi BE870911 601448862 BG747143 602704364 BI759297 603042939 AI765716 wi83f06.x AV652040 AV652040 Description BC011409 BC012716 BG747143 AI831562 BG402908 BG291462 BI759297 BI762347 BG469506 BG400591 BG424452 AK002629 BE870911 AI765716 AV652040 Query Match Length DB 640 639.8 636.8 Score 644 641.7 722.4 720.8 707.4 695.8 695.4 680.6 679.2 Result υ

Clone distribution: MGC clone distribution information can be found through the I.m.A.G.B. Consortium/LIML at: http://image.llnl.gov Series: IRAK Plate: 13 Row: b Column: 4 Fals: Cone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 450/814 This clone has the following problem: incomplete processing. Location/Qualifiers

FEATURES

Web site: http://www.hgsc.bcm.tmc.edu/cdna/ Contact: villalon@bcm.tmc.edu. Villalon, D.K., Luna, R.A., Hale, S.M., Hulyk, S., Lu, X., Garcia, A.M., Holloway, M., Telford, B, Hodgson, A., Bouck, J., Yu, W., Muzny,D.M., Gibbs,R.A.



- δ
 - Q
- ò

Search completed: August 21, 2002, 11:58:40 Job time: 32903 sec

```
499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ô
                                                                                            ò
                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FCQYFSKNALEIASEILQTPVTAYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
CHOCKPLPMEPRAYINASGEHGIVVFSIGSMYSEIPEKKRAAFADAGKIROYTUMRY
TGTRORNLANNTILAYWALPONDLIGHPWIRAFITHAGSHGYYESICAGVPWYMPLPR
DOWDNARKAWETKGAGYTLWYLEWISEDLENALKAYINDKSYKBYIMRLSSLHKDRPVE
PLDLAVFWVEFVWRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation-"MARTGWTSPIPLCVSLLLTCGFAEAGKLLVVPMDGSHWFTMQSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VEKLILRGHEVVVVMPEVSWQLGKSLNCTVKTYSTSYTLEDLDREFMDFADAQWKAQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RSLFSLFLSSSNGFFNLFFSHCRSLFNDRRLVEYLKESSFDAVFLDPFDACALIVAÄY
FSLPSVVFARGIGCHYLEEGAQCPAPLSYVPRILLGFSDAMAFKERVRNHILHLEEHL
                                                                                                                                                                                                                                                                                               Submitted (16-OCT-1997) Pharmacology and UCSD Cancer Center, University of California, San Diego, 9500 Gilman Dr, BSB 4th Floor
                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primetes; Catarrhini; Hominidae; Homo.
1 (basea 1 to 1593)
Strassburg.C.P., Manns.M.P. and Tukey, R.H.
Expression of the UDP-glucuronosyltransferase 1A locus in human colon. Identification and characterization of the novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                319 caaqtaqtatatattctctattaatgggttcatacaatgacattttgacttattt 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             139 atgaggtoggtggtggagaaactcattctcagggggcatgaggtggttgtagtcatgcca 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199 gaggigagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttca 258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     259 tataccctggaggatctggaccgggagttcaaggcttttgcccatgctcaatggaaagca 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          121 ATGCAGTCGGTGGTGGAGAAACTTATCCTCAGGGGGCATGAGGTGGTTGTAGTCATGCCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 ATGCTCGCACAGGGTGGACCAGCCCCATTCCCCTATGTGTTTCTCTGCTGCTGACCTGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match
64.4%; Score 1493.8; DB 9; Length 1593;
Best Local Similarity 96.1%; Pred. No. 0;
Matches 1531; Conservative 0; Mismatches 62; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product="UDP-glucuronosyltransferase 1A8"
/protein_id="AAB84259.1"
/db_xref="GI:2613044"
                                                                                                                                                                 J. Biol. Chem. 273 (15), 8719-8726 (1998) 98204857
                                                                                                                                                                                                                                                                                                                 University of California, San Diego, 9
Rm 4021, La Jolla, CA 92093-0636, USA
Location/Qualifiers
1. .1593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            442 t
                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
/chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            YGYRKCLGKKGRVKKAHKSKTH'
                                                                                                                                                                                                                                       2 (bases 1 to 1593)
Strassburg, C.P. and Tukey, R.H.
Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          390 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          371 c
                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              390 a
                                                                                                                                                                                                                                                                                                                                                                          source
                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                    dene
                                                                                                                                                                                                                                                            AUTHORS
                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                            REFERENCE
                                                                                                              AUTHORS
                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                           PUBMED
                                                                                                                                                                                                                                           REFERENCE
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
```

```
gatgetttgygeaaateeeteagaeagteetgtggeggtaeaetggaaeeegaeeateg 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               aatettgegaacaacaegataettgttaagtggetaececaaaacgatetgettggteae 1098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ccgatgacccgtgcctttatcacccatgctggttcccatggtgttttatgaaagcatatgc 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1219 atggagactzagggagctggagtgaccctgaatgttctggaaatgacttctgaagattta 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1201 ATGGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTGGAAATGACTTCTGAAGATTA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1339 tecageettaacaaggacegeceggtggageegetggaeetggeegtgttetgggtggag 1398
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1399 tttgtgatgaggcacaagggcgccacacctgcgccccgcagcccacgacctcacctgg 1458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1381 TITGIGAIGAGCACAAGGCGCGCCACACCIGCGCCCCGCAGCCCACGACCTCAGG 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          961 GATGCTTTG3GCAAAATCCCTCAGACAGTCCTGTGGCGGTACACTGGAACCCGACCATCG 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1021 AATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAAAACGATCTGCTTGGTCAC 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ttttcaaatigcaggagtttgtttaaagacaaaaattagtagaaatacttaaaggagagt 438
                                                  361 TITICGCATTGCAGGAGTTTGTTTAATGACCGAAGATTAGTAGAATACTTAAAGGAGAGT 420
                                                                                                       tottttgatycagtgtttctcgatccttttgataactgtggcttaattgttgccaaatat 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661 CAGTATTTTCCAAAAATGCCCTAGAAATAGCCTCTGAAATTCTCCAAACACCTGTCACA 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      859 aagccgttg:ctatggaatttgaagcctacattaatgcttctggagaacatggaattgtg 918
                                                                                                                                                            TCTTTTGATGCGGTGTTTCTTGATCCTTTTGATGCCTGTGCGTTAATTGTTGCCAAATAT
                                                                                                                                                                                                                 tteteceterectegtggtettegecaggggaataetttgecactatettgaagaaggt
                                                                                                                                                                                                                                            gcacagtgc:cttcctctttcctatgtccccagaattctcttagggttctcagatgcc
                                                                                                                                                                                                                                                                                                                                                                           541 GCACAGTGCCCTGCTCCTTTCCTATGTCCCCAGAATTCTCTTAGGGTTCTCAGATGCC
                                                                                                                                                                                                                                                                                                                                                                                                                                619 atgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatgc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     caccettttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttacg
```

8 9		ო დ		e ao	m 00	ກ ˙ ຜ	e r	2 3	е и	3 15	03		23 95	83 55	43 15	03	
GTT 35 taa 34	CAG 4	atc 46 ACC 53	tcg 52 TCT 59		gga 64 CCA 71	tag 70 AGA 77	cat 76 R3	aca 82 ACA 89	aag 88 AAG 95	tct 94 CT 10	aga 10 AGA 10	cttg 10 CTTG 11	ccc 11 	tgc 11 rgc 12	tga 12 TGA 13	tca 13 TCA 13	cgg 13 CGG 14
AGAACC	rcaga tttgt crcc	ttctcg TCACAG	ggtet GTACC	ctcttt crgrgr	agtac AGTGG	Egccc 3TATG	ccaca AGAGG	gcccaa GCCCAA	aatttga AATTTG	aatgg AATGG	ccctc	gata GATA	tatca TATCA	gatga GATGA	tggag rggag	agtca AGTCA	00000
GCTGA. atatt	TGCTCC cagga 	cagtgtt CTCTTTT	ctccgt ATCIGT	ctgctcc CAGACCC	ggagaga CCAACG	caaaaat TTCAAAC	ca AT	cgtgat GGTCAT	atgg CAGG	gggatc GGGATC	caaaat CAAAAA	caacac CAACAC	Egectt FGCCTT	catggt CATGGT	gggage GGGAGC	aaaagc AAAAGC	caagga CAAGGA
AGAAGA aagtata	TAA TAA TAA TAACT	tgatgc TGATGC	cctccc cctacc	gtgccc	tttcaa TTTTTC	tttttcaa rcrgrrrrc	tgatct. AATCAC	2005 	ttgcct TTGTCT	tcttt	ttggg TGGG	gcgaa GCGAA	accept 	gttcc GTTCC	actaa ACTAA	Jetet 	cttca
GACCAA(gtacgaa	달=달 달	tcttt AAGTT	ttete TGGG	gcaca AGCAG	atgac ATGAC	caccg IATTG	gagta GATAT	actatccc AATATCCT	aagccgt1 AAAGACT	gttttc GTTTTC	gatget GATGCT	aatctt AATCTT	ccgatg CCGATG	aatggc AATGGC	atggag ATGGAG	Jaaaat SAAAATC	ccago rccago
CCGTAT	- () — = -	gagagti GAGAGC	aaatat GAGTAT	gaaggt ACATTC	gatgee GACCAC	ttatgo CTATTT	<u>წ</u> — ს	ე _≴	1999a GAGG	aattgtg 	ttgct TGCT	catcg CATCG	gtcac GTCAC	tatgc ATGC	Jege 	atttag ATTTAG	gceteto GCCICIO
CAGTG ggaaa	TTGCT ttgac 	caaag TAAG	gttgcca CTGGCT	cttgaag GAGCATA	ttctcae TTTTCAC	ttta CTAT	acc AGA	Egt GT	gcca GTAA	atgg ATGG	tggcaa† TGGCAA	cccgac cccgac	tgcttg TGCTTG	aaagcat AAAGCA	atgcaaag ATGCAAAG	ctgaag CTGAAG	8 – 8
TCTATC ctcaat	rcac tt	atact CTTCT	taatt IGATC	actat 	taggg 	aggaac TGGAGC	tccaaaca 	cggacttl ATGACTT	tcaact TCAACT	gagaac GAGAAC	aaagcta1 	ctggaa CTGGAA	acgatc ACGATC	m — rn	:ggacaa GGACAA	tgactt TGACTT	agaacat AGAACAT
GAAAAAT cccatgc	aaac tgac carg	tagtaga CCCTGAA	tggct TGGG	ttgcc 3TGTT	tctct CTACA	cttgg TTTGT	ø ⊢	gcgaa AAGAT	tggta AGGTA	ttetg TTCTG	gaag GAAG	gtaca GTACA	ccaaaa 	tggtg TGGTG	atcagat ATCAGAT	Igaaa GAAA	aagg !AAGG
CACAA ttttg	ATTIG ataca GAAIA	aaaatta GGACAC	taactg ACCCTG	aatact: TTTCC	gaa GGT	catgca TGTTAA	ctctga ATCAGC	gttgtt CrGTT	cattgg CATTGG	taatgc TAATGC	tccaga TCCAGA	gtggcg GTGGCG	gctaco GCTACO	ttccca TTCCCA	tggtga TGGTGA	tgttctg rGTTCTG	agtt GTT
TACTA aaggc	CAATC ggttc TACAG	agacaa GACAG	ttttga	cagggg CAGGGG	gtccc 	ccacat 	atage CTCGC	aatttg rGTTTG	gatett GGTCTT	ctacat CTACAT	agaaati AGAAAT	gtect	aagtg AAGTG	getgg GCTGG	ttgtt rrgrr	ctgaa CTGAA	gacaaa
9 A 7 t	59 AC 47 tc 19 AC	04 aa 79 AG	64 ct - 39 CZ	24 CC 1 99 TC	84 atg	44 ac 119 AC	04 aa 11 79 AA	64 ca - 36 CT	24 tg 11	84 cc 11 56 CC	44 ca 1 16 CA	04 ca 	64 tta 36 TT	24 at 96 AT	84 cc 	8 = 8	04 at 76 AT
8 8	m	4 4	4	5, 5,	ğ 2	7.7	7.	76	8 8	8 6	101	100	106	112	118	124	130
Db Qy	oy Oy	Oy Dp	oy Pa	Qy Db	Qy	OY DD	Qy	Qy Dp	Qy Dp	Qy Db	0y 0b	QY Db	Qy Dp	Oy Db	Qy Db	0y 0b	Qy Db

```
1364 tggagccgctggacctggccgtgttctgggtggagtttgtgatgaggcacaagggcgcgc 1423
                                                                                                       1484 ttggtttoctcttggcogtcgtgctgaoagtggccttcatcacctttaaatgttgtgctt 1543
                                        1436 TGGAGCCGCTGGACCTGGCCGTGTTCTGGGTGGAGTTTGTGATGAGGCCACAAGGGCGCGC 1495
                                                                                 1424 cacacctgcgccccgcagcccacgacctcacctggtaccagtaccattccttggacgtga 1483
                                                                                                                                                                                                           1556 TIGGITICCTCTIGGCCGICGTGCTGACAGTGGCCTTCATCACCTTTAAATGTTGTCCTT 1615
                                                                                                                                                                                                                                                   1544 atggctaccggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaaatccaaga 1603
                                                                                                                                                                                                                                                                     1604 cccattgagaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttcca 1663
                                                                                                                                                                                                                                                                                                                                                         1664 aacttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcat 1723
                                                                                                                                                                                                                                                                                                                                                                                                                                            1735 AACTTGAAAACAGAATCAGTGTTAAATTCATTTTATTCTTATTAAGGAAATACTTTGCAT 1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1724 aaattaatcagccccagagtg-ctttaaaaaattctcttaaataaaaataatagactcgc 1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1783 tagtcagtaaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatga 1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1915 CATGTGCCATTTTTCAGAGGACGTGCAGACAGCTGGCATTCTAGATTACTTTTCTAGA 1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1975 CTGAAACAIGGCCTGTITGGGAGTGCGGGATTCAAAGGTGGTCCCACGGCTGCCCCTACT 2034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2035 GCAAATGGCAGTTTTAATCTTTTGGCTTCTGCAGATGGTTGC-ATTGATCCTTAA 2093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1855 TAGTCAGTAAAGATATTTGAATATGTATCGTGCCCCCTCCGGAGTCTTTGATCAGGATGA 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1843 catgigccattiticagaggacgigcagacaggciggcaticiagattactitictiaci 1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1903 ctgaaacatggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgccctact 1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1963 gcaaatggcagttttaatcttatcttttggcttctgcagatggttgcaattgatccttaa 2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2023 ccaataatggtcagtcctcatctctgtcctg-cttcataggtgccaccttgtgtgtttaa 2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2094 CCAATAATGGTCAGTCCTCATCTCTGACTTCATAGGTGCCACCTTGTG-GTTTAA 2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2142 tgagaacagcatatgatttcttgctttggggaaaaagaatgatgctatgaaattggtggg 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2202 tggtgtatttgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaacc 2261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2273 IGGIGIATITIGAGAAGATAATCATIGCTTAIGTCAAATGGAGCIGAATITGATAAAAACC 2332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AFUJUJIO 1593 bp mRNA linear PRI 26--
HOMO Sapiens UDP-glucuronosyltransferase 1A6 (UGTIA8) mRNA,
Complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2213 TGAGAACAGCATATGATTTCTTGCTTTGGGGAAAAAGAATGATGGTGTGAAAATGATGGTGGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF030310
                                                                                                                       셤
                                                                                                                                                                  ò
                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                    Qλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Š
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

PRI 26-OCT-2000

AF030310.1 GI:2613043

DEFINITION

ACCESSION

VERSION

```
1256 CCTTGTTTGGTGATCAGATGGACAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGA 1315
                                                                              1304 atgacaaaagttacaaggagaaacatcatgcgcctctccagccttcacaaggaccgccgg 1363
                                                                                              1376 ATGACAAAAGTTACAAGGAGAACATCATGCGCCTCTCCAGCCTTCACAAGGACCGCCGG 1435
                                                                                                                                    1364 tggagccgctggacctggccgtgttctgggtggagtttgtgatgaggcacaagggcgcgc 1423
                                                                                                                                                   14.36 TGGAGCCGCTGGACCTGGTCTGGGTGGAGTTTGTGATGAGGCAAAGGCCGCG 1495
                                                                                                                                                                                       1484 ttggtttcctcttggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgctt 1543
                                                                                                                                                                                                                                                              1556 TIGGTPTCCTCTTGGCCGTCGTGCTGACAGTGGCCTTCATCACCTTTAAATGTTGTCCTT 1615
                                                                                                                                                                                                                                                                                                   1544 atggctaccggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaaatccaaga 1603
                                                                                                                                                                                                                                                                                                              1604 cccattgagaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttcca 1663
                                                                                                                                                                                                                                                                                                                                                                    1664 aacttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcat 1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1783 tagtcagtaaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatga 1842
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1735 AACTIGAAAACAGAATCAGTGITAAATTCATITIATTTATGAGAAATACTITGCAT 1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1855 TACTCAGTAAAGATATTTGAATATGTATCGTGCCCCCTCCGGAGTCTTTGATCAGGATGA 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1963 gcaaatggcagttttaatctttatcttttggcttctgcagatggttgcaattgatccttaa 2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2035 GCAAATGGCAGTTTTAATCTTATCTTTTGGCTTCTGCAGATGGTTGC-ATTGAFCCTTAA 2093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2142 tgagwacagcatatgatttcttgctttggggaaaaagaatgatgctatgaaattggtggg 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2273 TGGTGTATTTGAGAAGATAATCATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACC 2332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2262 caaaatacagctatgaagtgctgggcaagtttac-tttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2202 tggtytatttgagaagataatcattgcttatgtcaaatggagctgaatttgataaaacc 2261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2333 CAAAAIACAGCTAIGAAGTGCTGGGCAAGTTTACTTTTTTTCTGAIGTTTCCTACAACT 2392
                                                                                                    qq
                                                                                                                                                    q
                                                                                                                                    ö
                                                                                                                                                                                       ö
                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
```

```
Homo sapiens phenol UDP-glucuronosyltransferase (UDPGT) mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EYLGLPSVYLFRGFPCSLEHTFSRSPDPVSYIPRCYTKFSDHMTFSGRVAMFLVNLLLE
PYLFYCLFSKYEKLASAVLKRDVDIITLSEVSVWLLRYDFVLEFPRPVMPNNYPIGGI
NCKRKDLSQEFEATINASGEHGIVVPSLGSHWSBIPEKRAMIADALGKNPQTVUM
TYGTRPSMLANTILVKMLPQNDLLGHPWTRAFITHAGSHGVYESICNGYPMVMPPLF
GDQMDNAKNAFTKGAGAVTLNYLENTSBLENALRAVINDKSYKENIMKLSSLHKDRPV
EPLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /translation="maclirsporisagoperlaimgmvvgdkilvvpodgsfhmlsmkd
IVEVLSDRGHEIVVVVPEVNLLLKEYKYYTRKIYPVPYDQEELKNRYQSFGNNHFAER
SFLTAPQTEYRNNMIVIGLYFINCQSLLQDRDTLNFFKESKFDALFTDPALPCGVILA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8
                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  47 ttcctctatgtgtgtgtctgctgctgacctgtggctttgccgaggcagggaagctactgg 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    119 TITCIGCAGGGTITICITCITAGCICITIGGGGCAIGGIIGIAGGIGACAAGCIGCIGG 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    107 tagtgcccatggatgggagccactggttcaccatgagtcggtggtggggagaactcattc 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         179 TGTCCCTCRGGACGGAGCCACTGGCTTAGTATAGATATAGTTGAGGTTCTCAGTG 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        167 tcagggggatgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             239 ACCGGGGTCATGAGATTGTAGTGGTGGTGCCTGAAGTTAATTTGCTTTTGAAAGAATACA 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               227 tgaattgcacagtgaagacttattcaacttcatataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 66.3%; Score 1539.2; DB 9; Length 2422; Best Local Similarity 82.0%; Pred. No. 0; Matches 1870; Conservative 0; Mismatches 398; Indels 12; Gaps
                                                                                                                                                                                                                                                                                 1 (bases 1 to 2422)
Harding, D., Fournel-Gigleux, S., Jackson, M.R. and Burchell, B.
Cloning and substrate specificity of a human phenol
UDP-gluouronosyltransferase expressed in COS-7 cells
Proc. Natl. Acad. Sci. U.S.A. 85 (22), 8381-8385 (1988)
                                                                                                                                                                                                                                                                                                                                                                                                                                       On Jan 18, 1995 this sequence version replaced g1:340517.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="UDP-glucuronosyltransferase"
                                                                                                                                                      UDP-glucuronosyltransferase; phenol.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /protein_id="AĀA61251.1"
/db_xref="GI:624725"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PYGYPKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                  Homo sapiens kidney cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /tissue_type="kidney"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        number="2.4.1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /db_xref="taxon:9606'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               555 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="UDPGT"
2404.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "UDPGT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2404. .2409
/gene="UDPGT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /gene="UDPGT"
516 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="UDPGT"
                                                                                                                                GI:624724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1683
                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               653 a
                                                                                                                                J04093.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                               DEFINITION
                                                                                                                                                                                                        ORGANISM
HUMUGT1FA
                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gene
                                                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CDS
                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DRIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

```
q
                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                  Dp
                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                       ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ОD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
a
                               ŏ
                                                                g
                                                                                                 δλ
                                                                                                                                q
                                                                                                                                                                   δ
                                                                                                                                                                                                  g
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear PAT 09-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cancer gene determination and therapeutic screening using signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                    1865 gtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttggga 1924
                                                                                                 1871 GIGCAGACAGGCIGGCATTCIAGATIACTITICITACICIGAAACAIGGCCIGITIGGGA 1930
                                                                                                                                                                   1931 GTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCTACTGCAAATGGCAGTTTTAATCTTA 1990
                                                                                                                                                                                                     1985 tettttggettetgeagatggttgeaattgateettaaceaataatggteagteeteete 2044
                                                                                                                                                                                                                      2105 gagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttcttg 2164
                                                                                                                                                                                                                                                                                                                                                                       2111 GAGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGATTTCTTG 2170
                                                                                                                                                                                                                                                                                                                                                                                                        2165 ctttggggaaaaagaatgatgctatgaaattggtggtggtgtgtttgagaagataatca 2224
                                                                                                                                                                                                                                                                                                                                                                                                                                       2171 CTTTGGGGAAAAAGAATGATGCTATGAAATTGGTGGTGGTGTATTTGAGAAGATAATCA 2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2225 ttgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctg 2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1925 gtgcgggattcaaaaggtggtcccaccgctgcccctactgcaaatggcagttttaatctta 1984
1805 atgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggac 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         47 ttoctotatgigigigictgotgotgacotgiggotttgccgaggcagggaagctactgg 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          119 TITCTGCAGGGGTTTTCTTCTTAGCTCTTTGGGGCATGGTTGTAGGTGACAAGCTGCTGG 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           107 tagtgcccatggatgggagccactggttcaccatgaggtcggtggtggagaaactcattc 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     66.3%; Score 1539.2; DB 6; Length 2422;
82.0%; Pred. No. 0;
tive 0; Mismatches 398; Indels 12; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Young,P.E., Augustus,M., Carter,K.C., Ebner,R., Endress,G.,
Horrigan,S., Soppet,D.R. and Weaver,Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2285 ggcaagtttactttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2291 GGCAAGTITACTITITICIGAIGTITICCTACAACT 2326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent: WO 0194629-A 7220 13-DEC-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 7220 from Patent W00194629.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
516 c 555 g 69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2422 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Oualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     555 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (ns)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AX336711.1 GI:18127430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Avalon Pharmaceuticals
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sest Local Similarity 82.09
Matches 1870; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       653 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AX336711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AX336711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                   g
                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                 a
                                                                                                                                  δ
                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                        ò
```

```
1076 CAGTCCTGTGGCGGTACACTGGAACCCGACCATCGAATCTTGCGAACAACACGATACTTG 1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1124 atgctggttcccatggtgtttatgaaagcatatgcaatggcgttcccatggtgatgatgc 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1184 octtgtttggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtga 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 944 cagaaattccagagaaagatatggcaattgctgatgcttgggcaaaatccctcaga 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1196 ATGCTGGTTCCCATGGTGTTTATGAAAGCATATGCAATGGCGTTCCCATGGTGATGATGC 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1016 CAGAAATTCCAGAGAAGAAAGCTATGGCAATTGCTGATGCTTTGGGCAAAAACCCTCAGA 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1004 cagteetgtggggggtacaetggaaceegaecategaatettgegaacaacaegataettg 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   524 ccaggggaatactttgccactatcttgaagaaggtgcacagtgccctgctcctttcct 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       584 atgtccccagaattctcttagggttctcagatgccatgactttcaaggagagagtacgga 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                659 ACATICCCAGGIGCTACACAAAGITITICAGACCACATGACTITITICCCAACGAGGGCCA 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          719 ACTICCTIGITAATITGITGGAGCCCTATCTATITTATIGICTGTTTTCAAAGTATGAGA 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           704 aaatagcetetgaaatteteeaaacaeetgttaeggagtatgatetetaeageeacae 763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                779 AACTCGCATCAGCTGTCCTCAAGAGATGT---GGATATAATCACCTTATCAGAGGTCT 835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             764 caatttggttgttgcgaacggactttgttttggactatcccaaacccgtgatgcccaaca 823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            884 cctacattaatgcttctggagaacatggaattgtggttttctctttgggatcaatggtct 943
                                                                                                                                                                                                                                                                                  227 tgaattgcacagtgaagacttattcaacttcatataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                                                                                                                                           299 AATACTACACAAGAAAATCTATCCAGTGCCGTATGACCAAGAAGAGCTGAAGAACGTT 358
                                                                                                                                                                                                                                                                                                                                                                                                                                            287 tcaaggcttttgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaa 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     359 ACCAATCATITGGAAACAATCACTITGCIGAGCGATCATICCIAACIGCICCICAGACAG 418
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  347 tgggttcatacaatgaca---tttttgacttattttttcaaattgcaggagtttgttta 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           419 AGTACAGGAATAACATGATTGTTATTGGCCTGTACTTCATCAACTGCCAGAGCCTCCTGC 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            404 aagacaaaaaattagtagaatacttaaaggagagttettttgatgeagtgtttetegate 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     479 AGGACAGGGACACCCTGAACTTCTTAAGGAGAGCAAGTTTGATGCTCTTTTCACAGACC 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  464 ottitgataacigiggettaatigitgeeaaatattieteeeteeeteegiggietiteg 523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       339 casccitacccisissessistaticississessistissesciaccarcistatics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     599 TCAGGGGTTTTCCGTGTTCCCTGGAGCATACATTCAGCAGAAGCCCAGACCCTGTGTCCT 658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             644 accacatcatgcacttggaggaacatttattatgccaccgttttttcaaaaatgccctag 703
                                  179 TGGTCCCTCAGGACGGAAGCCACTGGCTTAGTATGAAGGATATAGTTGAGGTTCTCAGTG 238
                                                                                                                   167 tcagggggcatgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                                                                                                239 ACCGGGGTCATGAGATTGTAGTGGTGGTGCCTGAAGTTAATTTGCTTTTGAAAGAATACA 298
= = = =
```

```
GINCLHONPLSQEFEAYINASGEHGIVVFSLGSMYSEIPEKKAMAIADALGKIPOTVL
MRYTGTRPSNLANNTILVKWLPQNDLLGHPWTRAFITHAGSHGYYESICNGVPMYMMP
LFGDQMDNAKRMETKGAGYTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDR
                                                                    /translation="MAVESGGGRIJVCLLLCVLGPVVSHAGKILLIPVDGSHMISML
GAIQQLQQRGHEIVVLAPDASLYIRDGAFYTLKTYPVPFQREDVKESFVSLGHNVFEN
DSFLQRVIKTYKKIKKDSAMLLSGCSHLLHNKELMASLAESSFDVMLTDPFLPCSPIV
                                                                                                                                              AQYLSLPTVFFLHALPCSLEFEATQCPNPFSYVPRPLSSHSDHWTFLQRVKNMLJAFS
QNFLCDVVYSPYATLASEFLQREVTVQDLLSSASVWLFRSDFVKDYPRPIMPNMVFVG
                                                                                                                                                                                                                                                                        PVEPLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFK
CCAYGYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5
                                                                                                                                                                                                                                                                                                                                                                                                                                                  /standard_name="bilirubin UDP-glucuronosyltransferase isozyme 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                188 tagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   248 attcaacttcatataccctggaggatctggaccgggagtt--caaggcttttgcccatgc 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  306 tcaatggaaagcacaagtacgaagtatattctctattaatgggttcatacaatgacat 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71 TGCT3GGCCCAGTGGTGCCCATGCTGGGAAGATACTGTTGATCCCAGTGGATGGCAGCC 130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  131 ACTG3CTGAGCATGCTTGGGGCCATCCAGCAGCTGCAGCAGCAGAGGGACATGAAATAGTTG 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    191 TCCTAGCACCTGACGCCTCGTTGTACATCAGAGGAGGAGTTTTACACCTTGAAGACGT 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    251 ACCCTGTGCCATTCCAAAGGGAGGATGTGAAAGAGTCTTTTGTTAGTCTCGGGCATAATG 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           371 ACTCTGCTATGCTTTTGTCTGGCTGTTCCCACTTACTGCACAACAAGGAGCTCATGGCCT 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          128 actggttcaccatgaggtcggtggtggagaactcattctcaggggggatgaggtggttg 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         311 TITITGAGAATGATTCTTCCTGCAGCGTGTGATCAAAACATACAAGAAAATAAAAAGG 370
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            485 tigitigecaaatattictecetecetecgiggietitegecagggaataettigecaet 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             545 atcttgaagaagtgcacagtgcctgctcctttcctatgtcccagaattctctag 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  366 ttttyact-tatttttttcaaattgcaggagtttgtttaaagacaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            425 acttaaaggagagttcttttgatgcagtgtttctcgatccttttgataactgtggcttaa 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        665 aacaittattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         =
=
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity 82.7%; Pred. No. 0;
56; Conservative 0; Mismatches 387; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'product="UDP-glucuronosyltransferase 1"
                                                 /db_xref="GDB:G00-120-007"
/protein_id="AAA63195.1"
/db_xref="G1:184473"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /EC_number="2.4.1.17"
/note="G00-120-007"
                                                                                                                                                                                                                                                                                                                                                                        /note="G00-120-007"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             557 g
                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="UGT1"
                                                                                                                                                                                                                                                                                                                                               /gene="UGT1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               540 c
                                                                                                                                                                                                                                                                                                                                                                                                      .1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 1866; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    = = = = =
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               601
                                                                                                                                                                                                                                                                                                                            sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                      mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ô
```

```
1091 ATCIGCTTGGTCACCCGAIGACCCGTGCCTTTATCACCCATGCTGCTCCCATGGTGTTT 1150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1085 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        atgaaagcatatgcaatggcgttcccatggtgatgatgccttgttttggtgatcagatgg 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1151 ATGAAAGCATATGCAATGGCGTTCCCATGGTGATGCCCTTGTTTGGTGATCAGATGG 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    cttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggaga 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1271 CTTCTGAAGATTTAGAAAATGCTCTAAAAGCAGTCATCAATGACAAAAGTTACAAGGAGA 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1691 TTAAATTCATTTTATTCTTATTAAGGAAATACTTTGCATAAATTAATCAGCCCCAGAGTG 1750
                                                                                                                                                                                                                                                                                                                                                                                                   965 ctatggcaa.ttgctgatgctttggggcaaaatccctcagacagtcctgtggcggtacactg 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1205 acaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatga 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1325 acatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctggccg 1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1331 ACATCATGCGCCTCTCCAGCCTTCACAAGACCGCCCGGTGGAGCCGCTGGACCTGGCCG 1390
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1385 tgttctgggtggagtttgtgatgaggcacaagggcgccacacctgcgccccgcagcc 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1445 acgacctcacctggtaccagtaccattccttggacgtgattggttcctcttggccgtcg 1504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1451 ACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCG 1510
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1505 tgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1511 TGCTGACAGTGGCCTTCATCACCTTTAAATGTTGTGCTTATGGCTACCGGAAATGCTTGG 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1565 ggaaaaaagggcgagttaagaaagcccacaaaatccaagacccattgagaagtgggga 1624
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1625 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtg 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1745 ctttaaaaaaattctcttaaataaaaaataatagactcgctagtcagtaaagatatttgaat 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1751 CTITAAAAAATTCTCTTAAATAAAAATAATAGACTCGCTAGTCAGTAAAGATATTGAAT 1810
                                                                                    671 AGAACTITCITGIGCGACGIGGITITATICCCCGIAIGCAACCCIIGCCICAGAATICCTIC 730
                                                                                                                                785 actttgtttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggtatca 844
                                                                                                                                                                                                                    845 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 904
                                                                                                                                                                                                                                                                851 ACTGCCTTCACCAAAATCCACTATCCCAGGAATTTGAAGCCTACATTAATGCTTCTGGAG 910
                                                                                                                                                                                                                                                                                                                                                       911 AACATGGAATTGTGGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAGAAGA 970
                                           725 aaacacctqttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784
                                                                                                                                                                                                                                                                                                            905 aacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaagaag
                                                                                    쉽
                                                                                                                                ò
                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                     ద
                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
```

	4 caatttggttgttgcgaacggactttgttttggactatcccaaacccgtgatgcccaca 823 	4 tgatetteattggtggtateaactgceatcagggaaagccgttgcctatggaatttgaag 883 	4 cctacattaatgcttctggagaacatggaattgtggttttctctttgggatcaatggtct 943 	4 cagaaattccagagaagaaagctatggcaattgctgatgctttgggcaaaatcctcaga 1003 	4 cagtcctgtggcggtacactggaacccgaccatcgaatcttgcgaacaacacgatacttg 1063	4 ttaagtggctacccaaaacgatctgcttggtcacccgatgacccgtgcctttatcaccc 1123	4 atgctggttcccatggtgtttatgaaagcatatgcaatggcgttcccatggtgatgc 1183 	4 octtgtttggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtga 1243 	4 coctgaatgttotggaaatgacttotgaagatttagaaaatgctotaaaagoagtoatoa 1303 	4 atgacaaaagttacaaggagaacatcatgcgcctctccagccttcacaaggaccgcccgg 1363 	4 tggagcgctggacctggccgtgttctgggtggagtttgtgatgaggggcacaagggcgcg 142.	4 cacacctgogcccogcagcccacgacctcacctggtaccagtaccattccttggacgtga 1483	4 ttggtttcctcttggccgtcgtgctgacagtggccttcatcaccctttaaatgttgtgctt 1543 	4 atggctaccggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaatccaaga 1603 	4 cccattgagaagtgggtgggaataaggtaaaattttgaaccattccctagtcatttcca 1663 	4 aacttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcat 1723 	44 aaattaatcagccccagagtgctttaaaaaattctcttaaataaa	4 agtoagtaaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgac 1843
b 726	76,	84	y 884 b 906	94	100	106	112	118	124	130	136.	142	148	154	160	y 166 b 168	y 172 b 174	178
ក្ន	oy G	රු පු	õă	oy G	g S	Oy Op	oy da	QQ Op	Qy Db	Oy Dp	ç G	oy G	Q Dp	S G	Q G	Ø B	o d	δλ

```
UDP-glucuronosyltransferase; bilirubin UDP-glucuronosyltransferase.
Human adult female liver, CDNA to mRNA, clones 26, 211 and 26MB2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 2351)
Ritter,J.K., Crawford,J.M. and Owens,I.S.
Cloning of two human liver billrubin UDP-glucuronosyltransferase
                          1806 AGTCAGTAAAGATATTTGAATATGTATCGTGCCCCCTCCGGTGTCTTTGATCAGGATGAC 1865
                                                                                       1904 tgaaacatggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgccctactg 1963
                                                                                                      1964 caaatggcagttttaatcttatcttttggcttctgcagatggttgcaattgatccttaac 2023
                                                                                                                                                                                                                                                                  /standard_name="bilirubin UDP-glucuronosyltransferase isozyme 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                           HUMHUGBRI 2351 bp mRNA linear PRI 07-1
Human bilirubin UDP-glucuronosyltransferase isozyme 1 mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /codon_start=1
/product="UDP-glucuronosyltransferase 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     cDNAs with expression in COS-1 cells
J. Biol. Chem. 266 (2), 1043-1047 (1991)
91093210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /tissue_lib="lambda-ZAP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /EC_number="2.4.1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="liver"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
1. .2351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /isolate="AK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="UGT1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           16. .1617
/gene="UGT1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /clone="26"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        M57899.1 GI:184472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LOCUS
DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HUMHUGBRI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                         g
                                                                                       ò
                                                                                                                   a
                                                                                                                                                ò
                                                                                                                                                                           g
                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                           òγ
```

ö g g õ 셤 ò g ò g õ g ò

ð

```
Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       648 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Scries: IRAK Plate: 42 Row: c Column: 8 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 4507814. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     linear PRI 22-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Center code: BCM-HGSC
Web Site: http://www.hgsc.bcm.tmc.edu/cdna/
Contact: angebcm.tmc.edu
Gunaratne, P.H., Garcia, A.M., Lu, X., Hulyk, S.W., Hale, S.M.,
Y.Soo, V.S., Kowis, C.R., Lawrence, S., Martin, R.G., Muzny, D.M.,
Richards, S., Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Direct Submission
Submitted (19-DEC-2001) National Institutes of Health, Mammalian
Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bouradol 2388 bp mRNA linear PRI 22-JAN-2
Homo sapiens, clone MGC:29860 IMAGE:4454322, mRNA, complete cds.
BC019861
                                                                        2201 GAATGATGCTATGAAATTGGTGGGTGGTGTATTTGAGAAGATAATCATTGCTTATGTCAA 2260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1901 GGCATTCTAGATTACTTTTCTTACTCTGAAACATGGCCTGTTTGGGAGTGCGGGATTCAA 1960
                                                                                                                                                                                                                                          2058 ataggtgccaccttgtgtgttttaaagaagggaagctttgtacctttagagtgtaggtgaa 2117
                                                                                                                                                                                                                                                                                                                                                                                    2141 ATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGATTTCTTGCTTTGGGGAAAAA 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                      2178 gaatgatgctatgaaattggtggtggtgtatttgagaagataatcattgcttatgtcaa 2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2238 atggagctgaatttgataaaaacccaaaatacagctatgaagtgctgggcaagtttactt 2297
                                              cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Baylor College of Medicine Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Contact: MGC help desk
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2298 tttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BC019861.1 GI:18043700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 2388)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
```

DEFINITION

ACCESSION

KEYWORDS

ORGANISM

TITLE JOURNAL AUTHORS REFERENCE

REMARK

RESULT 11

BC019861

```
/protein_id="AAH19861.1"
/db_xref="G1:18043701"
/translation="MACLLRSFQRISAGVFFLALWGMVVGDKLLVVPQDGSHWLSMKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     INCKKRRDLSOEFEAYINASGEHGIVVFSLGSMVSEIPEKKAMATADALGKIPOTVUM
RYTGYREBSHLANNTILVKHILDQNDLGHPWTARFITHAGSHGYVESLOKYPWMANE
FODOMDAKARTGKGAGYILAVLEMTSEDLENALKAYINDKSYKENIMRLSSLHKDRP
VEFLDLAVFWVEFYWRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKC
                                                                                                                                                                                                                                                                                                                                                                                                                                                          SFLTAPQTEYRNMIVIGLYFINCQSLLQDRDTLNFFKESKFDALFTDPALPCGVILA
EYLGLPSVYLFRGFPCSLEHTFSRSPDPVSYIPRCYTKFSDHMTFSQRVANFLVNLLE
                                                                                                                                                                                                                                                                                                                                                                                                                     IVEVLSDRGHEIVVVVPEVNLLLKESKYYTRKIYPVPYDQEELKNRYQSFGNNHFAER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PYLFYCLFSKYEELASAVLKRDVDIITLYQKVSVWLLRYDFVLEYPRPVMPNMVFIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167 tcagggggcatgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            404 aagacaaawaattagtagaatacttaaaggagagttcttttgatgcagtgtttctcgatc 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         486 CAGCCTTACCCTGTGGGGTGATCCTGGCTGAGTATTTGGGCCTACCATCTGTGTACCTCT 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    524 ccaggggaaltactttgccactatcttgaagaaggtgcacagtgccctgctcctttcct 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          47 ttcctctat:gtgtgtgtgtctgctgctgacctgtggctttgccgaggcagggaagctactgg 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              107 tagtgcccatggatgggagccactggttcaccatgaggtcggtggtggtggagaaactcattc 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    126 TGGTCCCTCAGGACGGAAGCCACTGGCTTAGTATGAAGGATATAGTTGAGGTTCTCAGTG 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         186 ACCGGGGTCATGAGATTGTAGTGGTGGTGCCTGAAGTTAATTTGCTTTTGAAAGAATCCA 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    227 tgaattgcscagtgaagacttattcaacttcatataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          246 AATACTACACAAAAAATCTATCCAGTGCCGTATGACCAAGAAGAGCTGAAGAACCGTT 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        287 tcaaggctittgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaa 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               306 ACCAATCANTIGGAAACAATCACTITGCTGAGCGATCATTCCTAACTGCTCCTCAGACAG 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             347 tgggttcatacaatgaca---tttttgacttatttttttcaaattgcaggagtttgttta 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   546 TCAGGGGTTTTCCGTGTTCCCTGGAGCATACATTCAGCAGAAGCCCAGACCCTGTGTCCT 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        644 accacatentgeacttggaggaacatttattatgccaccgttttttcaaaaatgccctag 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            666 ACTTCCTT(:TTAATTTGTTGGAGCCCTATCTATTTTATTGTCTGTTTTCAAAGTATGAAG 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    66 TITCTGCAGGGTTTTCTTCTTAGCACTTTGGGGCATGGTTGTAGGTGACAAGCTGCTGG 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    70.2%; Score 1629; DB 9; Length 2388; 82.5%; Pred. No. 0;
                                                                                                                                                                                                                                                                    /product="Unknown (protein for MGC:29860)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches 395; Indels
/clone="MGC:29860 IMAGE:4454322"
//stsue_Lype="Kidney, hypernephroma"
/clone_lib="NIH_MGC_89"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    691 t
                                                                                                                                                    /note="Vector: pcMV-SPORT6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAYGY RKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    546 g
                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    503 c
                                                                                                                                                                                              .1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 1879; Conservative
```

704 aaatagcctctgaaattctccaaacacctgttacggagtatgatctctacagccacacat 763

source

FEATURES

```
PLFCDQMDNAKRMETKGAGYTLNVLEWTSEDLENALKAVINDKSYKENIMRLSSLHKD
RPVEPLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITF
KCCAYGYRKCLGKKGRVKKAHKSKTH"
                                                               GGINCANGKPLSQEFEAYINASGEHGIVVFSLGSMYSEIPEKKAMAIADALGKIPQTV
LWRYTGTRPSNLANNTILVKWLPQNDLLGHPWTRAFITHAGSHGVYESICNGVPMYMM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /product="UDP-glucuronosyltransferase 2 family polypeptide
LAKYLSIPAVFFWRY IPCDLDFKGTQCPNPSSY IPKLLTTNSDHMTFLQRVKNMLYPL
                                     ALSYICHTFSAPYASLASELFQREVSVVDLVSYASVWLFRGDFVMDYPRPIMPNWVFI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101 CTGGCCTGAGAGGTGGAAAGGTGTTGGTGCTCCCACTGATGGCAGCCCCTGGCTCAGCAT 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            201 ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       141 gaggtcggtggtggagaaactcattctcagggggcatgaggtggttgtagtcatgccaga 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      161 GCGGGAGGCCTTGCGGGAGCTCCATGCCAGAGGCCACCAGGGGGGTGGTCCTCACCCCAGA 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           221 GGTGAATATGCACATCAAAGAAGAAATTTTTCACCCTGACAGCCTATGCTGTTCCATG 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261 taccotggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagc 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 281 GACCCAGAAGGAATTTGATCGCGTTACGCTGGGCTACACAGGGTTCTTTGAAACAGA 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       318 acaagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      341 ACATCTICTGAAGAGATATICTAGAAGTATGGCAATTATGAACAATGTATCTTTGGCCCT 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         378 tttttcaaattgcaggagtttgtttaaagacaaaaattagtagaatacttaaaggagg 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            401 TCATAGGTGTTGTGTGGAGCTACTGCATAATGAGGCCCTGATCAGGCACCTGAATGCTAC 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   438 ttcttttgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaata 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  498 titcicccicccciccgtggicticgccaggggaatactitgccactatctigaagaagg 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           521 CCTGTCGATTCCTGCTGTTTTTTTGGAGGTACATTCCATGTGACTTAGACTTTAAGGG 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          558 tgcacagtgccctgctcctttcctatgtccccagaattctcttagggttctcagatgc 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                618 catgactitcaaggagagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           70.5%; Score 1636.6; DB 9; Length 2368; 83.4%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches 369; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          657 t
                                                                                                                                                                                                                                                                                                                                                                           /gene="UGT2B"
/EC_number="2.4.1.17"
/note="G00-127-753"
                                                                                                                                                                                                                                                                                                            'note-"G00-127-753"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      573 g
                                                                                                                                                                                                                                                                       /gene="UGT2B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             83.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          534 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches 1871; Conservative
                                                                                                                                                                                                                                                                                                                                             .1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      604 a
                                                                                                                                                                                                                                             sig_peptide
                                                                                                                                                                                                                                                                                                                                             mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
```

d ŏ ద ò q à d ŏ 엄 ð 셤 ŏ g ŏ g ŏ g ò 셤 ŏ q

ö

```
941 GGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAGAAGAAGCTATGGCAATTGC 1000
                                                                                                                                                                                                                                                  978 tgatgctttggggcaaaatccctcagacagtcctgtgggggtacactggaacccgaccatc 1037
                                                                                                                                                                                                                                                                            1038 gaatcttgcgaacaacacgatacttgttaagtggctacccaaaacgatctgcttggtca 1097
                                                                                                                                                                                                                                                                                                                                                                                    1061 GAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAAAACGATCTGCTTGGTCA 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                1098 cccgatgacccgtgcctttatcacccatgctggttcccatggtgtttatgaaagcatatg 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1121 CCCGATGACCCGTGCCTTTATCACCCATGCTGGTTCCCATGGTGTTTATGAAAGCATATG 1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1158 caatggcgttcccatggtgatgatgccttgtttggtgatcagatggacaatgcaaagcg 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1181 CAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAGATGGACAATGCAAAGCG 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1218 catggagactaagggagctggagtgacctgaatgttctggaaatgacttctgaagattt 1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1241 CATGGAGACTAAGGGAGCTGGAGTGACCTGGAATGTTCTGGAAATGACTTCTGAAGATTT 1300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1278 agaaaatgetetaaaageagteateaatgaeaaaggttaeaaaggagaaeateatgegeet 1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1301 AGAAAATGCTCTAAAAGCAGTCATCAATGACAAAGTTACAAGGAGAACATCATGCGCCT 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1421 GTTTGTGATGAGGCACAAGGGCGCCCACACCTGCGCCCGCAGCCCACGACCTCACCTG 1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1458 gtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctgacagtggc 1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1481 GTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCGTGGTGACAGTGGC 1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1661 TTTGAACCATTCCCTAGTCATTTCCAAACTTGAAAACAGAATCAGTGTAAATTCATTTT 1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1758 tettaaataaaaataatagaetegetagteagtaagaatatttgaatatgtategteee 1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1878 ggcattctagattacttttcttactctgaaacatggcctgtttgggagtgcgggattcaa 1937
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1398 gtttgtgatgaggcacaagggcgccacacctgcgccccgcagcccacgacctcacctg 1457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1518 cttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaaaaagggcg 1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1541 CTTCATCACCTTTAAATGTTGTGCTTATGGCTACCGGAAATGCTTGGGGAAAAAAGGGCG 1600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1638 tttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgttaaattcatttt 1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1698 attettattaaggaaataetttgeataaattaateageeecagagtgetttaaaaaatte 1757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1781 TCTTAAATAAAATAATAGACTCGCTAGTCAGTAAAGATATTTGAATATGTATCGTGCCC 1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1818 cctccggtgtctttgatcaggatgacatgtgccatttttcagaggacgtgcagacaggct 1877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            858 aaagccgttgcctatggaatttgaagcctacattaatgcttctggagaacatggaattgt 917
                                                                                                               881 GAAGCCACTATCTCAGGAATTTGAAGCCTACATTAATGCTTCTGGAGAACATGGAATTGT 940
                                                                                                                                                          g
                                                                   ð
                                                                                                          q
                                                                                                                                                          ö
                                                                                                                                                                                                    q
                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
```

Qy Db	846	ctgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggaga 	905
O _Y	906	tggaattgtgttttctctttggatcaatggtctcagaaattccagagaagaaga 	965
Oy Dp	966	tatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactgg	1025 660
6 G	1026	aacckgaccatcgaatcttgcgaacaacaacgatacttgttaagtggctaccccaaaacga 	1085
Qy Dp	1086	tctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttta 	1145
Qy Dp	1146	tgaaugcatatgcaatggcgttcccatggtgatgatgatgcccttgtttggtgatcagatgga 	1205 840
Qy Db	1206	caatycaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatgac 	1265 900
0y Dp	1266	ttttgaagatttagaaaatgctttaaaagcagtcatcaatgacaaaagttacaaggagaa 	1325 960
OY Dp	1326 961	catcatgcgctctccagccttcacaaggaccgcccggtggagccgctggacctggcgt 	1385
Oy Dp	1386	gttctgggtggagtttgtgatgaggcacaagggcgccacactgcgccccgcagcca 	1445
Oy Dp	1446	cgacttcacttggtaccagtaccattcttggacgtgattggtttcctttggccgtcgt 	1505
Qy Db	1506	gctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggg	1565
O.y	1566	gaaaaaaggcgagttaagaaagcccacaaatccaagacccattgagaagtgggtgg	1625 1260
9y Db	1626	ataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgt 	1685
9 9	1686	taaaltcatttattottattaaggaaatactttgcataaattaatcagcccagagtgc 	1745
Oy Op	1746	tttaaaaaattotottaaataaaaataatagaotogotagtoagtaaagatatttgaata 	1805
Oy Db	1806	tgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggacg 	1865
S S	1866	tgcagacaggctggcattctagattactttcttactctgaaacatggcctgtttgggag 	1925
ò	92	tgcgggattcaaaggtggtccacgctgcccctactgcaaatggcagttttaatctta	9 8

```
/product="UDP-glucuronosyltransferase 2 family polypeptide \mathbf{B}^{\mathrm{n}}_{\mathrm{n}}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /db_xref="GDB:GO0-127-753"
/translation="WARGLOVPLERLATGLLLLSVQPWAESGKVLVVPTDGSPWLSM
/translation="WARGLQVPLERLATGLLLLSVQPWAESGKVLVVPTDGSPPLEM
REALRELHARGHOWLTPEVNMHIKEEKFFTLAV&AVPWTOKEPDRVTLGYTGGFFE
REALRELHARSSMAIMNNVSIALHRCCVELLHNBALIRHLNATSFDVVLTDPVNLCGAV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRI 07-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UDP-glucuronosyltransferase; bilirubin UDP-glucuronosyltransferase.
Human adult female liver, CDNA to mRNA, clones 217 and 21795E2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.

1 (bases 1 to 2368)

Ritter, J.K., Crawford, J.M. and Owens, I.S.
Cloning of two human liver bilirubin UDP-glucuronosyltransferase CDMs with expression in COS-1 cells
J. Biol. Chem. 266 (2), 1043-1047 (1991)
                                                                                                                                                                 1986 cttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatct 2045
                                                                                                                    1621 CTTTTGGCTTCTGCAGATGGTTGCAATTGATCCTTAACCAATAATGGTCAGTCCTCATCT 1680
                                                                                                                                                                                                                                                                 2106 agigtaggigaaaigaaigaaiggciiggagigcacigagaacagcaiatgaiiictigc 2165
                                                                                                                                                                                                                                                                                                                    1741 AGTGTAGGTSAAATGAATGAATGCCTTGGAGTGCACTGAGAACAGCATATGATTTCTTGC 1800
                                                                                                                                                                                                                                                                                                                                                                 2166 tttggggaaaaagaatgatgctatgaaattggtggtggtggtgtttgagaagataatcat 2225
                                                                                                                                                                                                                                                                                                                                                                                                                   2226 tgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctgg 2285
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1561 TGCGGGATTCAAAGGTGGTCCCACGGCTGCCCCTACTGCAAATGGCAGTTTAAATCTTAT 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /standard_name="bilirubin UDP-glucuronosyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Human bilirubin UDP-glucuronosyltransferase isozyme 2 mRNA,
linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2286 gcaagtttacttttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAA63196.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       lib="lambda-ZAP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2368 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /EC_number="2.4.1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /tissue_type="liver"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /map="Unassigned"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /isolate="AK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "UGT 2B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="UGT2B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    M57951.1 GI:184474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HUMHUGBR2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HUMHUGBR2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

AUTHORS Watanabe,K., Kumagai,A., Itakura,S., Yamazaki,M., Tashiro,H., Ota,T., Suzuki,Y., Obayashi,M., Wishi,T., Shibahara,T., Tanaka,T., Nakamura,Y., Isogai,T. and Sugano,S., TITLE NEDO human cDNA sequencing project JOURNAL Onpublished (2000) REFERENCE (bases 1 to 2003) AUTHORS Sugano,S., Suzuki,Y., Ota,T., Obayashi,M., Nishi,T., Isogai,T., Shibahara,T., Tanaka,T. and Nakamura,Y. TITLE Direct Submission JOURNAL Submitted (29-AUG-2000) to the DDBJ/EMBL/GenBank databases. Sumio Sugano, Institute of Medical Science, University of Tokyo, Ishbratory of Genema Apallack Luman Comm.	Shirokands (E-mail:c Fax:813- NEDO huma Internatil sequencin construct Virology Universit Agency).	PASE COUNT 551 a 414 c 445 g 508 TOTOGRADIAN TOTOGRADI	Ouery Match Best Local Similarity 98.1%; Score 1895.8; DB 9; Length 2003; Best Local Similarity 98.1%; Pred. No. 0; Matches 1918; Conservative 0; Mismatches 37; Indels 0; Gs 36 ttttgacttattttttcaattgcaggagtttgtttaaagacaaaaattagtagaata	Db 61 CTTAAAGGAGAGTTCTTTGATGCAGTGTTTCTGGATCCTTTTGATGCTTAAT 120 Qy 486 tgttgccaaatatttctccctccctcgtggtcttcgccagggaatactttgccacta 545 [12] GTTGTTAAATATTCTCCCTCCCTGTGGTTTTTTTTTTTT	Oy 606 gttctcagatgccatgactttcaaggagagagccacatcatgcacttggagga 665 [11] [11] [11] [11] [11] [11] [11] [11
QY 1502 tcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgct 1561 Db 1543 TcGrGcTGACAGTGGCCTTTAAATGTTGTGCCTATGGCTACGGAAATGCT 1602 CY 1562 tggggaaaaaagggcgagttaagaaagcccacaaatccaagaccattgagaagtgggtg 1621 Db 1603 tGGGAAAAAAGGGCGGGGTTAAGAAGCCCACAAATCCAAGACCCATTGAGAACTGGTG 1662 QY 1622 ggaaataagtgaaaattttgaaccattccctagtcatttccaaacttgaaacaagaacca 1681 CA 1623 ggaaataagtaaaattttgaaccattccctagtcatttccaaacttgaaacaagaatca 1681 Db 1663 GGAAATAAAGGAAACCATTGGTCAGTCAGTCCAAACTTGAAAAAAAA		Oy 1862 gacgtgcagacaggctggcattctgattactttcttactctgaacatggctgttg 1921		2221 2221 2259 2281 2319	RESULT 9 AK025403 LOCUS AK025403 LOCUS BETINITION AK056188 Home sapiens UDP-glucuronesyltransferase 1A9 (UGT1A9) ACCESSION ACCESSION AK025403 AKCOMAIS AKUSAUS BUMARAYOCA: Metazoa, Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

```
셤
                                                                       g
                                                                                                          ò
                                                                                                                                         g
                                                                                                                                                                          ò
                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /translation-"MTRTGMSSPLPLCVCLLLACGFAEAGKLLVVPVDGSHWLSMRSV
VEKTLIACHEVVVVMEKVSMCLGRPLMCTVKTYSTSYTLEDLDREFKAFKOAQWKAQV
GSIFSLIMSSYNDIPLFSWCRSLFKDKKLVFTLKESSFDAVFLDPFDTGLIVAKY
LSLPSVVTARKVYCHTLEEGAQCPAPLSYVPRILLGFSDAMFFKERNKNIIMHLEERL
LCHFFKRALETASELLOTPVYVDLHRQISIMLLRMDFVLDYPKFVMENNFFIGGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHOGK PLPMEFEATINASGEHG IVVFSLGSMYAEIPEKKAMATADALGKIDOTVLWRY
TGTPPSNIAMINTLLKWILQVOLDLGHPWTRAPTHGGGHOT BECILOVOPPMWARDLFG
DOWNNAKANETKGGOYTLNYLEWISEDLENALKAYINDKSYKRYIMHLSSLHKORPVE
PLDLAVFWVEFWRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAIVLIVAFIAFRCCA
                                                                                                                                                                                                                                                                                                   Submitted (05-NOV-1998) Molecular Endocrinology, Laval University, 2705 Laurier Boulevard, Sainte-Foy, Que G1V4G2, Canada
                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                              Albert, C., Vallee, M., Beaudry, G., Belanger, A. and Hum, D.W.
The monkey and human uridine diphosphate-glucuronosyltransferase
UG11A9, expressed in steroid target tissues, are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              43 resecrecestrecersarsacrescassessesses as resecretecerraters 102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               62 gtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggatg 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                103 GTCTGCTGCTGCCCTGTGCCTTTGCCGAGGCAGGCAGGCTGCTGGTAGTGCCCGTGGATG 162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 122 ggagccactggttcaccatgaggtcggtggtggagaaactcattctcaggggcatgagg 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    182 tggttgtagtcatgccagaggtgagttggcaactggaagatcactgaattgcacagtga 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   223 TGGTCGTAGTCATGCCAAAGGTGAGTTGGCAGCTGGGAAGACCACTGAATTGCACAGTGA 282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    302 atgotcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatg 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 tcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtt 61
                                                                                                                                                                                                                                                                  Albert,C., Vallee,M., Beaudry,G., Belanger,A. and Hum,D.W. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="UDP-glucuronosyltransferase UGT1A09"
/protein_id="AAF15546.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               89.5%; Score 2076; DB 9; Length 2396; 94.6%; Pred. No. 0;
tive 0; Mismatches 120; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                         /organism="Macaca fascicularis"
                                                                                                                                                                                   estrogen-conjugating enzymes
Endocrinology 140 (7), 3292-3302 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  680 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YGYRKCFGKKGRVKKAHKSKTH
                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:9541"
                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  558 g
                                                                                                    Cercopithecinae; Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                             /codon_start-1
 AF104336.1 GI:6537137
                                                                                                                                                                                                                                                      (bases 1 to 2396)
                                                                                                                 (bases 1 to 2396)
                                  crab-eating macaque.
                                                   Macaca fascicularis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                513 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 2194; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  645 a
                                                                                                                                                                                                                                       10385426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                         source
                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                  JOURNAL
                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                    AUTHORS
                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                                                                                                                                                   PUBMED
                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                        CDS
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
1063 CIGGAACCCCACCATCGAATCTIGCGAACAATACGATACTTGTTAAGTGGCTACCCCAAA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1202 tggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaa 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1262 tgacttotgaagatttagaaaatgetetaaaageagteateaatgacaaaagttacaagg 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              962 aagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtaca 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1022 ctggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaa 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1142 tttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcaga 1201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1183 ITTATGAAGGCATATGCAATGGCGTTCCCATGGTGATGCCCTTGTTTGGTGATCAGA 1242
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1243 TGGACAATGCAAAGGCATGGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTTGAAA 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1382 ccqtgttctgggtggagtttgtgatgaggcacaaagggcgccacacctgcgcccgcag 1441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1423 CCGTGTTCTGGGTGGAGTTTGTGATGAGGCACAAAGGCGCACCACACCTGCGCCCCGCAG 1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1483 CCACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATCGGTTCCTCGGCCA 1542
542 actatctt3aagaaggtgcacagtgccctgctcctcttcctatgtccccagaattctct 601
                                                                                                                                                                                                                                                                    583 ACTAICITGAAGAAGGIGCGCAGIGCCCIGCICCITITCCIAIGICCCCAGAATICIT 642
                                                                                                                                                                                                                                                                                                                 602 tagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttgg 661
                                                                                                                                                                                                                                                                                                                                         662 aggaacatitattatgccaccgttttttcaaaaatgccctagaaatgcctcgaaattc 721
                                                                                                                                                                                                                                                                                                                                                                                                                               823 TGGACTTTGTTTTGGACTATCCCAAACCGGTGATGCCCAACATGGTCTTCATTGGTGGTA 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1322 agaacatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctgg 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1442 cccacgacctcacctggtaccagtaccattccttggacgtgattggttcctcttggccg 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              763 ITCAAACACCTGTCACAGTATATGATCTTCACAGACAAATATCAATTTGGTTGCTGCGAA 822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          782 cggactttyttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggta 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     842 tcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctg 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

323	. 367	. 427	487	: 547 : 563	607	c 667 683	, 727	t 787 T 803	t 847 T 863	c 907 923	a 967 A 983	1027 1 1043	c 1087 1103	g 1147 G 1163	a 1207 1223	t 1267 T 1283	a 1327 A 1343	t 1387
	atatattototattaatgggttoataoaatgaoattt 	aggagtttgtttaaagacaaaaattagtagaatact 	<pre>gtgtttctcgatcctttgataactgtggcttaattg </pre>	tccgtggtcttcgccaggggaatactttgccactatc 	gotoctotttoctatgtococagaattotottagggt 	gagagatacggaaccacatcatgcacttggaggaa 	.caaaaatgcctagaaatagcctctgaaattctccaaa 	ctacagccacatcaatttggttgttgcgaacggact 	gtgatgcccaacatgatcttcattggtggtgtatcaac 	tatggaatttgaagcctac&ttaatgcttctggagaa(gggatcaatggtctcagaaattccagagaagaagct; 	caaaatccctcagacagtcctgtggcggtacactggaa 	caacacgatacttgttaagtggctaccccaaaacgat; 	goctttatcacccatgctggttcccatggtgtttat 	catggtgatgatgccttgtttggtgatcagatggac 	gggagotggagtgacotgaatgttotggaaatgact 	aaaagcagtcatcaatgacaaagttacaaggagac 	caaggaccgcccggtggagccgctggacctggccgtg
	8 aatggaaagcacaagtacgaagt 	8 ttgacttattttttcaaattgo 	8 taaaggagagttcttttgatgca 	8 ttgccaaatatttctcctcccc	8 ttgaagaaggtgcacagtgcctt 	8 tctcagatgccatgacttcaag 	8 atttattatgccaccgtttttt 	8 cacctgttacggagtatgatct 	Strittggactatccaaacco	8 gccatcagggaaagccgttgcc 	8 atggaattgtggttttctcttt 	68 tggcaattgctgatgctttgggc 	28 cccgaccatcgaatcttgcgaac 	88 tgcttggtcacccgatgacccgt. 	48 aaagcatatgcaatggcgttccc 	08 atgcaaagcgcatggagactaa 	68 ctgaagatttagaaaatgctct 	28 tcatgcgcctctccagccttcac
26	32	38	44	. 48	54	60	99	72 7	78	œ œ	ō ō	o o	10	11	11	12	12	13
셤	Qy Db	g G	Q Q	5 B	δ δ	S G	S G	\$ B	Q Dp	ç d	ç G	S G	9 9	δ _γ	QY DP	Oy Db	Qy Db	δ

2106 agtgtaggtgaaatgaatggattggagtgcactgagaacagcatatgatttcttgc 2165 1688 aattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtg-ct 1746 1867 gcagacaggctggcattc-tagattacttttcttactctgaaacatggcctgtttgggag 1925 2046 ctgtcctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacctttag 2105 2062 CIGICCIGACIICAIAGGIGCCAGGIGIGIGITIAAAGAAGGGAAGCIIIGIACCIIIAG 2121 2166 tttggggaaaaagaatgatgctatgaaattggtggtggtgtttgagaagataatcat 2225 2226 tgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctgg 2285 1404 TCTGGGTGGAGTTTGTTATGAGGCACAAGGGGCGCAACCACCTGCGCCCGCAGCCCAGG 1463 1448 acctcacctggtaccagtaccattccttggacgtgattggttcctcttggccgtcgtgc 1507 ttaaaaaaattotottaaataaaaataatagaotogotagtoagtaaagatatttgaatat 1806 1763 TTAAAAAATTCTCTTAAATAAAATAATAGACTCGCTAGTCAGTAAAGATATTTGAATAT 1822 2122 AGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGATTTCTTGC 2181 1344 TCATGCGCCTCTCCAGCCTTCACAAGGACCGCCGGTGGAGCCGCTGGACCTGGCCGTGT 1403 1388 tctgggtggagtttgtgatgaggcacaagggcgcgccacactgcgccccgcagcccacg 1447 1464 ACCICACCIGGIACCAGIACCATICCIIGGACGIGAIIGGIIICCICIIGGCCGCCGTGC 1523 tgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgggga 1567 1628 aaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgtta 1687 1508 엄 ò g 엄 ò 셤 ò 셤 셤 셤 δ g δλ 셤 Ω 엄 δ δy 엄 ŏ Qγ 셤 ö 셤 ö g Óλ δy ò

Macaca fascicularis UDP-glucuronosyltransferase UGT1A09 mRNA, complete cds. DEFINITION 8 RESULT 8

ACCESSION

```
1196 ATGAAAGCATATGCAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAGATGG 1255
                                                                                     1265 cttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggaga 1324
                                                                                                    1505 tgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1564
                                                                                                                                                                                                                                                                                                                                       1676 AATAAGGTAAAATTTTGAACCATTCCCTAGTCATTTCCAAACTTGAAAACAGAATCAGTG 1735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagcccagagtg 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1625 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1736 TTAAATTCATTTTATTCAGGAAATACTTTGCATAAATAATCAGCCCCAGAGTG 1795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1804 tatgratcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagagga 1863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1864 cgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttggg 1923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1916 CGTGCAGACAGGCTGGCATTCTAGATTACTTTTCTTACTCTGAAACATGGCCTGTTTGGG 1975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1976 AGTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCTACTGCAAATGGCAGTTTAATCTT 2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1984 atct:ttggcttctgcagatggttgcaattgatccttaacćaataatggtcagtcctcat 2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2104 agagigtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttctt 2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2164 gctt:ggggaaaaagaatgatgctatgaaattggtggtggtgtgttttgagaagataatc 2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1856 TATGTATCGTGCCCCTCCGGTGTCTTTGATCAGGATGACATGTGCCATTTTTCAGAGGA 1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1924 agiggggattcaaaggiggtcccaccgctgccctactgcaaaiggcagitttaaicti 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2036 ATCTTTGGCTTCTGCAGATGGTTGCAATTGATCCTTAACCAATAATGGTCAGTCCTCAT 2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2224 attgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgct 2283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2216 GCTTTGGGGAAAAAAATGATGCTATGAAATTGGTGGTGGTGTTTTGAGAAAAATC 2275
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2276 ATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCAAAATACAGCTATGAAGTGCT 2335
                                                                                                                                                                                                      1385 igitcigggiggagittgigatgaggcacaaggggcgccacaccigcgcccgcagccc
                            ö
                                                       g
                                                                                     ö
                                                                                                               g
                                                                                                                                               õ
                                                                                                                                                                       ద
                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
```

```
ьзэувь 2392 bp mRNA linear PRI 04-MAY-2000
Homo sapiens UDP-glucuronosyltransferase mRNA, complete cds.
S55985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CERTIFICATION STREET OF THE TREET OF T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DQMDNAKRMETKGAGVTMNVLEMTSEELENALKAVINDKSYKENIMRLSSLHKDRPVE
PLDLAVFWVEFVMRHKGATHLRPAAHDLTWYQYHSLDVIGFLLAAVLTVAFITCKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FSLPSVVFARGILCHYLEEGAQCPAPLSYVPRILLGFSDDMTFKERVRNHIMHLEEHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LCHRFFKNALEIASEILQTPVTEYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
CHERKALPMEFEAYINASGEHGIVGFSLGSMVSEIPEKKAMAIADALGKIPQTVLMRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TGTRPCNLANNT1LVKWLPQNDLLGHPMTSAF1THAGSHGVYES1CNGVPMVMMPLFG
                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 2392)
Wooster,R., Sutherland,L., Ebner,T., Clarke,D., Da Cruz e Silva,O. and Burchell,B.
                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Cloning and stable expression of a new member of the human liver phenol/bilirubin: UDP-glucuronosyltransferase cDNA family Biochem. J. 278 (Pt 2), 465-469 (1991) 91378895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              presented here differs from translation in publication"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note="phenol/bilirubin; lugP4; conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GenBank staff at the National Library of Medicine created this entry [NCBI gibbsq 55985] from the original journal article. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               93.0%; Score 2156.8; DB 9; Length 2392;
97.7%; Pred. No. 0;
Live 0; Mismatches 47; Indels 7; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                129 ctggttcaccatgaggtcggtggtggagaaactcattctcaggggggatgatggttgt 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            189 agtca-tyccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           145 CTGGTTCACCATGAGGTCGGTGGAGAAACTCATTCTCAGGGGGCATGAGGTGGTTGT 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      205 AGTCAGTGCCAGAGGTGAGTTGGCAACTGGGAAGATCAATGAATTGCACAGTGAAGACTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="UDP-glucuronosyltransferase"
=
=
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      685 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YGYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="AAB19791
/db_xref="G1:7690346"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /tissue_type="liver"
35. .1627
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 554 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start=1
                                                                                                                                                                                                                                     S55985.1 GI:235453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      492 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 97.78 Matches 2262; Conservative
                                                                                                                                                                                                                                                                                                                 Homo sapiens
                                                                                                                                                                                                                                                                                     human liver.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                       DEFINITION
                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   BASE COUNT
                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOURNAL
                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                     VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                                                     SOURCE
                                                                                                                                            S55985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGIN
     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
```

248 attcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcccatgctc 307

```
1136 ATCTGCTTGGTCACCCGATGACCCGTGCTTTATCACCCATGCTGGTTCCCATGGTGTT 1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       956 AACATGGAATTGTGGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAGAAGAAG 1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      965 ctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactg 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1016 CTATGGCAATTGCTGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGCGGTACACTG 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1025 gaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1085 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgtt 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1145 atgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcagatgg 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        905 aacatggaattgtggttttttttttgggatcaatggtctcagaaattccagagaagaaag 964
                                                                                                                                                                                                                                                                                                                                                                                                                       485 tigitgecaaatatiteteeeteeetegtggtettegeeaggggaataeittgeeae 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       185 tigtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaaga 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                416 ITCTICACITATITITICGCATIGCAGGAGITIGITITAAIGACCGAAAAITAGIAGAAT 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    536 INGINGCIAAANATITUTCCCCTCCTCTGTGGTCTTCACCAGGGGAATATTTTGCCACC 595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       596 ATCTIGAAGAAGGIGCACAGIGCCCIGCICCITICCIAIGTCCCCAAIGAICTCTIAG 655
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         665 aacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             716 ACCATTTATTTTGCCAGTATCTTTTAGAAATGCCCTAGAAATAGCCTCTGAAATTCTCC 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  785 actttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggtatca 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  845 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 904
                                                                             125 gccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgaggtgg 184
                                                                                                                                 176 GTCACTGGTTCACCATGCAGTCGGTGGTGGAGAAACTTATCCTCAGGGGGCATGAGGTGG 235
                                                                                                                                                                                                                                    236 TIGIAGICATGCCAGAGGIGAGIIGGCAACIGGAAAGAICACIGAAITGCACAGIGAAGA 295
                                                                                                                                                                                                                                                                                      245 cttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcccatg 304
                                                                                                                                                                                                                                                                                                                                       296 CITACICAACCICGIACACICTGGAAGAICAGAACCGGGAAITCAIGGIIIICGCCCAIG 355
                                                                                                                                                                                                                                                                                                                                                                                            305 ctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatgaca 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               365 tttttgacttatttttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425 acttaaaggagattettttgatgeagtgtttetegateettttgataaetgtggettaa 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        545 atcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctcttag 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        605 ggiteteagatgecatgaetiteaaggagagagtaeggaaecacateatgeaettggagg 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                  ò
                                                                                                                                                                                        ò
                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cDNA Library Preparation: Life Technologles, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Sequencing Group at the Stanford Human Genome Center, Stanford University School of Medicine, Stanford, CA 94305 Web site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Clone distribution: MGC clone distribution information can be found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /translation="maragwtspvplcvcllltcgfaeagkllvvpmbgshwftmgsv
veklilrghevyvvwppevswqlerslnctvktystsytledqnrefwyfahaqwkaqa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FSLPSVVFTRGIFCHHLEEGAQCPAPLSYVPNDLLGFSDAMTFKERVWNHIVHLEDHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FCQYLFRNALEIASEILQTPVTAYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHOCKPLOMEFRAYIMASGEHGIVVFSIGSMVSEIPEKKAMAIADALGKIPOTVLWRY
TGTRPSNLANNTILVKWLPONDLLGHPWTRAPITHAGSHGVYESICNGVPWVMPIPFG
DQMDNAKRMETKGAGVTLNVLEWTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDV IGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QSIFSLLMSSSSGFLDLFFSHCRSLFNDRKLVEYLKESSFDAVFLDPFDTCGLIVAKY
                                                                                                                                                                                           Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Rominidae; Homo.
1 (bases 1 to 2423)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grlmwood, J., Rodriquez, A., and Myers,
     Homo sapiens, Similar to UDP glycosyltransferase 1 family, polypeptide A9, clone MGC:9353 IMAGE:3850654, mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Series: IRAK Plate: 20 Row: m Column: 8
This clone was selected for full length sequencing because it
passed the following selection criteria: GenomeScan gene
prediction, Similarity but not identity to protein.
                                                                                                                                                                                                                                                                                                                       Submitted (03-JAN-2002) National Institutes of Health, Mammalian
                                                                                                                                                                                                                                                                                                                                                                        Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="Similar to UDP glycosyltransferase 1 famlly,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. 0;
0; Mismatches 69; Indels 1; Gaps
                                                                                                                                                                                                                                                                                                                                                  Gene Collection (MGC), Cancer Genomics Office, National Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5 gotgoagttototgatggottgcacagggtggaccagccccttcctctatgtgtgtgtc 64
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94.6%; Score 2194.6; DB 9; Length 2423; 97.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /organism="Homo sapiens"
| Day xref="taxon:9606" |
| Alone="MGC:953 IMAGE:8850654" |
| Alissue_type="Colon adenocarcinoma"
                                                                                                                                                                                                                                                                                                                                                                                                                               NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          707 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Vector: pCMV-SPORT6"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     otein_id="AAH20971.1"
._xref="GI:18088087"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_llb="NIH_MGC_65"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           GYRKCLGKKGRVKKAHKSKTH"
514 c 559 g 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     polypeptide A9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                               BC020971.1 GI:18088086
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best_Local Similarity 97.0%
Matches 2247; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1662
                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                        Strausberg, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            643 a
                                                                                                                                            namin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
           DEFINITION
                                                                                                                                                                  ORGANISM
                                                                                                                                                                                                                                                                                                 TITLE
JOURNAL
                                                               ACCESSION
                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CDS
                                                                                                                   KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                               REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                           COMMENT
                                                                                        VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
```

	04	49	64	24		44 89	04 49	64 09	24	84	44 89	04 49	64 009	024 069	084 129	4 8	104	64	24 69
230 TTGTAGTCATGCCAGAGGTGAGTTGGCAACTGGGAAAATCAATGAAMTGCAAAAAA	45 cttattcaacttcatatacctggaggatctggaccgggagttcaaggcttttgccatg 3	O CTTACTCAACCTCATACACTCTGGAGGATCTGGACCGGGAATTCATGGATTCGCCGATG 3	305 ctcaatggaagcacaagtacgaagtatattattctctattaatgggttcatacaatgaca 3	aaaaattagtagaat 4 	cctcgatccttttgataactgtgcttaa 4	185 tigitgecaaatatiteteeteeeteegiggietiegeeagggaataetiigeeaet 5. 	ctcttag 6	605 ggitcicagaigccaigaciticaaggagagagitacggaaccacaicaigcaciiggagg 6. 	665 aacatttattatgccaccgtttttccaaaatgccctagaaatagcctctgaaattctcc 7. 	725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 71 	85 actigititiggactateceaaaceegtgatgeceaacatgatetteattggtggtgtatea 8. 	445 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 90 	905 aacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaagaag 90 	965 ctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactg 10 	025 gaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 10 	085 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 11 	45 atgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcagatgg 12 	205 acaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatga 12 	265 cttctgaagatttagaaatgctctaaaagcagtcatcaatgacaaagttacaaggaga 13
QQ	δλ	qq	B ý	Oy Op	oy O	oy Og	oy da	oy D	QΩ	oy Ob	, qa	oy Pb	oy Db	Qy 9DP 1(Oy 10	Oy 1(Oy 11	Oy 13	Oy 15

linear PRI 22-JAN-2002

mRNA

2423 bp

RESULT 6 BC020971 LOCUS BC020971

Qy Dp	RESUI AF460 LOCUO	ACCE	SOUR	REFE AU	REFE	JOI						BASE	OKIG Ou	Ma Qy	oy Qy	Db	QQ	Qy
gacctgaatgttctggaaatga 1264 	RESU	9cgcctctccagccttcacaaggaccgcccggtggagccgctggacctggccg 1384	999999969696969696966 1444 	ggtaccagtaccattccttggacgtgattggtttcctcttggccgtcg 1504	gotgacagtggcottcatcacotttaaatgttgtgcttatggctaccggaaatgcttgg 1564	11 12 13 14 1624 17 17 17 17 17 17 17 17 17 1	gaaccattccctagtcatttccaaacttgaaacagaatcagtg 1684 	taaattoattttattottattaaggaaataotttgoataaattaatoagooocagagtg 1744 	tttaaaaaattotottaaataaaaataatagactogotagtoagtaaagatatttgaat 1804 	gtgcccctccggtgtctttgatcaggatgacatgtgccattttcagaggac 1864 	tgcagacaggctggcattctagattactttcttactctgaaacatggcctgtttggga 1924 	gtggtcccaccgctgccctactgcaaatggcagttttaatctta 1984	OKEU CITITGGCTLCTGCagatggttgcaattgatccttaaccaataatggtcagtcctcatc 2044	procecttytytytyttaaagaagggaagctttytacttta 2104 Ma	Db 164 Db Db Db Db Db Db Db D	ggaaaaagaatgatgtatttgagagtgtatttgagaagataatca 224 Db	tatgtcaaatggagctgaatttgataaaacccaaaatacagctatgaagtgctg 2284	3 2299
1205 acaatgcaaagcgcatggagactaagggagctggagt 	1265 cttctgaagatttagaaaatg 	1325 acatcatgcgcctctccagcc 	1385 tgttctgggtggagtttgtgatgaggcacaa 	1445 acgacctcacctggtaccagt 	1505 tgctgacagtggccttcatca 	1565 ggaaaaagggcgagttaaga 	1625 aataaggtaaaattttgaacc 	1685 ttaaattcattttattcttat 	1745 ctttaaaaaattctcttaaat 	1805 atgtatcgtgcccctccggt 	1865 gtgcagacaggctggcattct 	1925 gtgcgggattcaaaggtggtc 	1985 tcttttggcttctgcagatgg 	2045 totgtoctgottcataggtgo 	2105 gagtgtaggtgaaatgaatga 	2165 ctttggggaaaaagaatgatg 	2225 ttgcttatgtcaaatggagct	2240 TTGCTTATGTCAAATGGAGCT
Qy Dp	Qy	Qy Dp	Qy Dp	Qy Db	Qy Db	Qy Db	QY Db	Q P	oy OD	Qy Dp	QY	Qy Dp	o d	OY Ob	Qy Db	Qy Dp	Qy	QQ

```
Homo sapiens UDP-glucuronosyltransferase UGTIA8*1 (UGTIA8) mRNA, UGTIA8*1 allele, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VEKLILRGHEVVVVMPEVSWOLGKSLNCTVKTYSTSTTLEDLDREFNDFADAQWRAQV
RSLFSELESSANGFWIFFSBHGRESHORKLYBTIKESSPADATLDFPDAGLITVAKT
FSLPSVVFARGTAGFTLERGAQCPAPLSYVBRILLGFSDAMFKERVKNHIMHLEBHL
FSLPSVVFARGTAGFTLERGAQCPAPLSYVBRILLGFSDAMFKERVKNHIMHLEBHL
FCQYFSKNALEIASEILQTFVYAYDLYSHTSIWLLRTDFVLDYPKFVMPNMIFIGGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHĢGK PLPMEFBAY INAŠGEHGIVVFSLGSMVSEIPEKKAMALADALGKIPQTVLMRY
TGTRE SNLANITILKKALPQNDLAGHPARTARGSHGVY ESICUVOPPYMMPLFG
DOMONAKRMETKGAGYTLMYLEMTSEDLENALKAVINDKSYKENIMKLSSLHKDREVE
PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /translation="MARTGWTSPIPLCVSLLLTCGFAEAGKLLVVPMDGSHWFTMQSV
                                                                                                                                                                                                                                                                                                                             Homo sapiens
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bukaryota; Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 2394)
Huang, Y.-H., Nguyen, N., Geske, D. and Tukey, R.
1 dentification and functional characterization of UGTIA8*1,
UGTIA8*2 and UGTIA8*3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Huang,Y.-H., Nguyen,N., Geske,D. and Tukey,R.
Direct Submission
Submitted (21-DEC-2001) Pharmacology, UCSD, 9500 Gilman Drive, La Jolla, CA 92093, USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                185 ttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaaga 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   50 GCTGCAGTTCTCTCATGGCTCGCACAGGGTGGACCAGCCCCATTCCCCTATGTGTTTCTC 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              125 gecactggtteaceatgaggteggtggtggagaaaetteatteteagggggeatgaggtgg 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="UDP-glucuronosyltransferase UGT1A8*1"
/protein_id="AAL75964:1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         95.1%; Score 2207.4; DB 9; Length 2394; 97.3%; Pred. No. 0; tive 0; Mismatches 61; Indels 1;
702 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          YGYRKCLGKKGRVKKAHKSKTH"
513 c 555 q 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /db_xref-"GI:18568219"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /tissue_type="colon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                555 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /allele="UGT1A8*1"
                                                                                                                                                                                                                                                           AF462268.1 GI:18568218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 2394)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    est_Local Similarity y/.s<sup>1</sup>
atches 2255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished
                                                                                                                                                                                                                                                                                                           human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           uery Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 source
                                                                                                                                                                                                                                                                                                                               RGANISM
                                                                                                                                                                                            INITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gene
                                                                                                                                                                                                                                       SSION
                                                                                                                        ULT :
                                                                                                                                                                                                                                                                                                                                                                                                      RENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                ITLE
```

```
4303 bp mRNA linear PRI 07-FEB-2002 UGTIA8*2 (UGTLA8) mRNA. UGTIA8*2 allele, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /translation-"MARTGWTSPIPLCVSLLLTCGFAEAGKLLVVPMDGSHWFTMQSV
VEKLILLGRHEVVVVMPDEVSWOLGKSINCTVKTYSTSYTLEDLDREFWDFADAGWKAQV
RSLFSLFLSSSROFFWLFFSHCRSLFWDKKLVFTLKESFDAVFLDPFDACGLIVAKY
FSLFSVFRAGIGCHYLEEGAQCPAPLSYVPRILLGFSDAMFFRERVRHIMHLEBHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COYFSKNALEIASEILOTPYTAPDLYSHTSIWLIATDFYLDYBRYDRYDRYDRYDRYDRYDRYCCONTOCK PLEWERAL INASCEHGIYVESLGSWYSEIPEKKAMAIADALGKIPOYUMRY TGTRP SNILANNTILYMKHEONDLICHDRYRAFTHRASHEYESICHWYSPRYWARDILFG DOMONAKRWETKAGYYLINYLEWYSEDLENALKAYINDKSYKENIRKISSIHRORPYP PLDLAVFWYEFYMRHKGAPHLRPAAHDLTWYQYHSLDYIGFLLAVVILYVBFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (21-DEC-2001) Pharmacology, UCSD, 9500 Gilman Drive, La
Jolla, CA 92093, USA
                                                                        20 GCTGCAGTTCTCTCATGGCTCGCACAGGGTGGACCAGCCCCATTCCCCTATGTGTTTCTC 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 2363)
Huang,Y.-H., Geske,D., Nguyen,N. and Tukey,R.
Identification and functional characterization of UGTIA8*1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95.6%; Score 2218.4; DB 9; Length 2363; 97.4%; Pred. No. 0; Live 0; Mismatches 61; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /product="UDP-glucuronosyltransferase UGT1A8*2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       61; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -H., Geske, D., Nguyen, N. and Tukey, R.
                                                                                                                                                692 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /protein_id="AAL75963.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YGYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /db_xref="GI:18568217"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /tissue_type="colon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        551 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /allele="UGT1A8*2"
                                                                                                                                                                                                                                                                                                                                                      AF462267.1 GI:18568216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UGT1A8*2 and UGT1A8*3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 2363)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        503 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 2255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      617 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Huang, Y
                                                                                                                                                                                                                                                                                                                                                                                              human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene
                                                                                                                                                                                                                                                                                                                                     ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                             AF462267
                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                    염
                                                                                                                                                                                     q
                                                                                                          엄
                                                                                                                                                  ò
                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
```

```
1025 gaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1040 GAACCCGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGGCTACCCCAAAACG 1099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1085 atctgcttggtcaccgatgaccgtgcctttatcacccatgctggttcccatggtgttt 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1100 ATCTGCTTGSTCACCCGATGACCCGTGCCTTTATCACCCATGCTGCTTCCCATGGTGTTT 1159
125 gccactggf:tcaccatgaggtcggtggtggagaaactcattctcagggggcatgaggtgg 184
                                                                                                                        245 cttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcccatg 304
                                                                                                                                               260 CTTACTCAACCTCATACACTCTGGAGGATCTGGACCGGGAATTCATGGATTTCGCCGGTG 319
                                                                                                                                                                                                                                    425 acttaaaggagagttctttgatgcagtgtttctcgatccttttgataactgtggcttaa 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     365 tttttgacttatttttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                    440 ACTTAAAGGAGAGTTCTTTTGATGCGGTGTTTCTTGATCCTTTTGATGCCTGTGGCTTAAA 499
                                                                                                                                                                                                                                                                                                                       485 tigtigccaaatatticiccitccctccgtggtcttcgccaggggaatactttgccact 544
                                                                                                                                                                                                                                                                                                                                                                      545 atcttgaagaaggtgcacagtgccctgctcctctttcctatgtccccagaattctcttag 604
                                                                                                                                                                                                                                                                                                                                                                                              560 ATCTTGAAGAAGGTGCACAGTGCCCTGCTCCTTTCCTATGTCCCCAGAATTCTCTTAG 619
                                                                                                                                                                                                                                                                                                                                                                                                                        605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   905 aacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaagaag 964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgcgaacgg 784
                                              g
                                                                        á
                                                                                                                        ò
                                                                                                                                               g
                                                                                                                                                                                             g
                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                             엄
                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
```

Ô		20	80	40	0 0	09	20	80	4 0 4 0	0 0	09	20	08	4 4 0 0	0 0	09	020	080
Gaps	gtg 6 GTG 6	gat 1 GAT 1	Jag 11	cagtg 2,	8 E	aat 30 AAT 30	Jta 4	99c 4	tttgc 5. TTTGC 5.	ctc 6	ttg 6 TTG 6	aaatt 7 AAATT 7	cga 7 CGA 7	gtggt 8 Greer 8	gettet 9 GCTTCT 9	gaag 9 GAAG 9	gtac 1 GTAC 1	ccaa 1
0;	ctatgt CTATGT	cccatg CCCATG	gggcate GGGCAT	gcaca 	jetttgo 	gttcatacaat 	aattag \AATTAG	taactgte TAACTGT	gaatactt GAATACTT	cagaattete 	atgcactte 		ttgttgcga rrgrrgcga	cattggt CATTGGT	taatget TAATGCT	caga aga	19 cg	ogtggctacco
ndels	cettecte 	gtagtgo 	tcagg TCAGG	ctgaattgcac 	ggagttcaaggett 	tgggt1 TGGGT	racaaaaaat 	ttttgata TTTTGATA	5 – 5	gteces	cacatcatg	tagec VTAGCC	tttggttg \TTTGGTTG	atette ATCTTC	at -	gaaatt SAAATT	cagtectgte 	aagtgg AAGTGG
0, I	8 = 8	ctactgg 	tcatto TCATTO	tca TCA	gggagt GGGAGT	ctctattaatgg CTCTATTAATGG	ttaaagac TTAAAGAC	ctcgatcctt 	gtcttcgccagg 	cctate	gaac SAAC	tagaaa TAGAAA	catcaa CATCA#	ccaacatgatette 	aageet AAGCCT	tctcag 	cagacac CAGACAC	cttgttaag
hes	ggaccagco 	raag SAAG	ggagaactcattc 	tgggaage TGGGAAG	tggacc TGGACC		gtttgt! Grrigr	ttctcg 	tggtct rGGrCr	ctctt CTCTTT	gagtac GAGTAC	atgeee ATGCCC	agccacacatcaat 	ğ – ğ	yaatttgaagcctac 	caatgg 	ち드림	cgatac CGATAC
ismatch	cagggt CAGGGT	gaggcaggg 	gtggtgg GTGGTGG	ggcaact	ctggaggatctggaccgg 	ogaagtatatat 	gcaggag1 GCAGGAG7	cagtgtttc 	ccctccgtgg 	ctgete CTGCTC	aggaga AGGAGA	tcaaaa TCAAAA	ctac CTAC	ccgtgate CCGTGATC	ctatgg CTATGG	tgggat TGGGAT	gcaaaa GCAAAA	acaaca ACAACA
. to	cttgca 	32 - 33	jteg STCG	agtt 	cctgg 	tacgaa TACGAA	tttttcaaattg 	gatg GATG	secto 	ctatcttgaagaaggtgcacagtgcctgctcctctttcctat. 	gttctcagatgccatgactttcaaggagagagatacg; 	gaacatttattatgccaccgtttttcaaaaatgccctagaaatagcctt. 	cctgttacggagtatgatct CCTGTTACGGAGTATGATCTCT	ccaaacccg	catcaggaaagccgttgcctatgg 	aattgtggttttctctttgggatcaatggtctcagaaattc 	ctgatgetttgggcaaaatco 	catogaatottgogaacaacacgata
, ke	ratgg SATGG	gtggcttte 	catgagg CATGAGG	cagaggtg CAGAGGTG	catatacco	acaag 	ttttt TTTTT	ttctt 	₩ — E	rtgcac STGCAC	catga CATGA	Jccacc 	eggagt eggagt	actato 	jaaagc SAAAGC	tggttt rGGTTT	ctgatg 	cgaatc CGAATC
ervatí	rtetete 	gacct GACCT	gttcac GTTCAC	satgo ATGC	caacttc	tggaaagcacaagtacg IGGAAAGCACAAGTACG	ttatt 	taaaggagagttetti TAAAGGAGAGTTETTT	ccaaatattto 	agaage AGAAGC	agatgo 	attatç ATTATC	tgttac TGTTAC	ctttgttttggactatc 	tcagge TCAGG	aattg AATTG	catggcaattgc 	accat
Cons	ctgcag CTGCAG	tget 	ccactg CCACTG	ttgtagt TTGTAGT	cttattc CTTATTC	ctcaatg CTCAATG	ttttga« TTTGAG	검드답	ttgttgc rrgrrgc	tettga rcrrGA	gttete Grrere	acattt ACATTT	aacacc 		otgo 	igaacatgga GAACATGGA	ctatggc CTATGGC	actggaaccgacc
2320;	ctcage CTCAG	tgtetge GTCTG	gggagg GGGAGG	gtggt GTGGT	aagac AAGAC	catgo CATGC	gacati GACAT	gaata GAATA	ttaat TTAAT	cacta CACTA	ttagg TTAGG	gagga GAGGA	ctccaaacac 	acgga ACGGA	atcaad ATCAAG	ggaga GGAGA	aaagc AAAGC	actgg ACTGG
tches	1 1	61	121	181	241	301	361	421	481	541 541	601	661	721	781	841	901	961	1021
Ма	Oy Dp	Oy Db	Qy Db	Oy Dp	Oy Db	Oy Db	Oy Dp	Oy Dp	Qy Db	Oy Db	Oy Db	Oy Dp	Oy Db	Oy Db	Oy Db	Oy Dp	Oy Db	Oy Dp

1141 gtttatgaaagcatatgcaatggcgttcccatggtgatgatgatgccttgtttggtgatcag 1200 1881 agigitaaattoattitattottattaaggaaataottigoataaattaatoagooocoag 1740 1681 AGTGTTAAATTCATTTTATTCTTATTAAGGAAATACTTTGCATAAATTAATCAGCCCCAG 1740 1741 agtgotttaaaaaattotottaaataaaaataatagaotogotagtoagtaaagatattt 1800 1801 gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccattttcaga 1860 1861 ggacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgttt 1920 1861 GGACGTGCAGACAGGCTGGCATTCTAGATTACTTTTCTTACTCTGAAACATGGCCTGTTT 1920 1921 gggagtgcgggattcaaaggtggtcccaccgctgccctactgcaaatggcagttttaat 1980 1981 cttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcct 2040 2101 tttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160 1141 GTTTATGAAAGCATATGCAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAG 1200 1201 atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 1260 1201 ATGGACAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGACCTGAATGTTCTGGAA 1260 1261 atgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaag 1320 gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg 1380 1381 gccgtgttctgggtggagtttgtgatgaggcacaaggggggcgccacacctgcgcccgca 1440 1441 geccaegaceteacetggtaceagtaceatteettggaegtgattggttteetettggee 1500 1501 gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc 1560 1501 GTCGTGCTGACAGTGGCCTTCATCACTTTAAATGTTGTGCTTATGGCTACCGGAAATGC 1560 1561 TTGGGGAAAAAGGGCGAGTTAAGAAAGCCCACAAATCCAAGACCCATTGAGAAGTGGGT 1620 1621 gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 1680 1921 GGGAGTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCTACTGCAAATGGCAGTTTTAAT 1980 1081 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1140 1321 οy g р δλ g δy g ò g Qγ g QΥ g δ g δ D ŏ g ÓΫ В QΥ g δy g ŏ g ŏ g δ g q δλ

```
1081 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1140
                                               1441 gcccacgacctcacctggtaccagtaccattccttggacgtgattggtttcctcttggcc 1500
1021 ACTGGAACCCGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAA 1080
                                                                                                                                                             1201 atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 1260
                                                                                                                                                                                1261 atgactictgaagatitagaaaatgcictaaaagcagicaicaatgacaaaagtacaag 1320
                                                                                                                                                                                                                                            1381 gccgtgttctgggttggagtttgtgatgaggcacaagggggggcgccacacctgcgccccgca 1440
                                                                                                                                                                                                                                                                                                                                                                             1381 GCCGTGTTCTGGGTGGAGTTTGTGATGAGGACACAGGCGCGCCCCACACACGCCCCCCCA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1441 GCCCACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCC 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1561 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggt 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1621 gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1621 GGGAAATAAGGTAAAATTTTGAACCATTCCCTAGTCATTTCCAAACTTGAAAACAGAATC 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1741 AGTGCTTTAAAAATTCTCTTAAATAATAATAATAGACTCGCTAGTCAGTAAAGATATTT 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1801 gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccattttcaga 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 999aytgcgggattcaaaggtggtcccaccgctgcccctactgcaaatggcagttttaat 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1981 cttarcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcct 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1981 CITATCITITGGCIICTGCAGAIGGIIGCAATIGAICCIIAACCAAIAAIGGICAGICCI 2040
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2041 catc.ctgtcctgcttcataggtgccaccttgtgtgttttaaagaagggaagctttgtacc 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1741 agtgotttaaaaaattotottaaataaaaataatagaotogotagtoagtaaagatattt 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1801 GAATATGTATCGTGCCCCCTCCGGTGTCTTTGATCAGGATGACATGTGCCATTTTTCAGA 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1861 ggacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgttt 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1921 GGGAGTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCTACTGCAAATGGCAGTTTTAAT 1980
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2041 CATCTGTCCTGCTTCATAGGTGCCACCTTGTGTTTAAAGAAGGGAAGCTTTGTACC 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1501 gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc
                              ð
                                                                                             õ
                                                                                                                         g
                                                                                                                                                             ð
                                                                                                                                                                                       g
                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
```

```
PRI 13-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /translation-"MACTGWTSPLPLCVCLLLTCGFAEAGKLLVVPMDGSHWFTMRSV
VEKLILRGHEVVVVWPPEVSWQLGRSLNCTVKTYSTSTTLEDLDREFKAFAHAQWKAQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RSIYSLLMGSYNDIFDLFFSNCRSLFKDKKLVEYLKESSFDAVFLDPFDNCGLIVAKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FSLPSVVFARGILCHYLEEGAQCPAPLSYVPRILLGFSDAMTFKERVRNHIMHLEEHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LCHRFFKNALEIASEILQTPVTEYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TGTRPSNLANNTILVKWLPQNDLLGHPMTRAFITHAGSHGVYESICNGVPMVMMPLFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHQGKPLPMEFEAYINASGEHGIVVFSLGSMVSEIPEKKAMAIADALGKIPQTVLWRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostoml;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.

    (bases 1 to 2320)

Submitted (12-AUG-1998) Heritable Disorders Branch, NICHD, 9000 Rockville Pike, Bethesda, MD 20892, USA Sequence update by submitter
                                                                                           2221 atcattgc:tatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagt 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Submitted (30-MAR-1998) Heritable Disorders Branch, NICHD, 9000 Rockville Pike, Bethesda, MD 20892, USA (bases 1 to 2320)
                                                                                                                                      2221 ATCATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCAAAATACAGCTATGAAGT 2280
                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens UDP-glucuronosyltransferase 1A9 (UGT1A9) mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        On Aug 13, 1998 this sequence version replaced gi:3025895.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 2320; DB 9; Length 2320;
Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ciotti,M., Potter,C. and Owens,I.S.
Human phenol metabolizing UDP-glucuronosyltransferase
Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ict="UDP-glucuronosyltransferase 1A9"
                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                                      2281 gctgggcaagtttactttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                             2281 GCTGGGCAAGTTTACTTTTTTCTGATGTTTCCTACAACT 2320
                                                                                                                                                                                                                                                                                                                                                           mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     670 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ciotti, M., Potter, C. and Owens, I.S. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ciotti, M., Potter, C. and Owens, I.S. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /protein_id~"AAC31425.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                         2320 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YGYRKCLGKKGRVKKAHKSKTH'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type-"liver"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /db_xref="GI:3025896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                547 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /gene="UGT1A9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /gene="UGT1A9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.08;
100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                             AF056188.1 GI:3414797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (bases 1 to 2320)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     495 C
                                                                                                                                                                                                                                                                                                                                                                                                 complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                      AF056188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                           DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                        ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                               AF056188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                  VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORIGIN
                                                                                                                                      g
                                                                                                                                                                                    ò
```

m

ö

```
/protein_id="CAD12275.1"
/db_xref="G1:17048800"
/translation="MACTGWTSPLPLCVCLLITCGFAEAGKLLVVPMDGSHWFTMRSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FSLPSVVFARGILCHYLEEGAQCPAPLSYVPRILLGFSDAMTFKERVRNHIMHLEEHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LCHRFFKNALEIASEILQTPVTEYDLYSHTSIWLLRTDFVLDYPKPVMPNM1FIGGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TGTERSNI-ANNTILVKWILPONDILGHPWTRAFITHAGSHCVYESICNGVPWYMPILFG
DOMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLIAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PAT 21-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VEKLILRGHEVVVVMPEVSWQLGRSLNCTVKTYSTSYTLEDLDREFKAFAHAQWKAQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RSIYSLLMGSYNDIFDLFFSNCRSLFKDKKLVEYLKESSFDAVFLDPFDNCGLIVAKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHQGK PLPMEFEAY INASGEHGIVVFSLGSMVSEIPEKKAMAIADALGKIPQTVLWRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutherla; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                      2100
1861 GGACGTGCAGACAGGCTGCCATTCTAGATTACTTTCTTACTCTGAAACATGCCTGTTT 1920
                                                                              1921 gggagtgcgggattcaaaggtggtcccaccgctgcccctactgcaaatggcagttttaat 1980
                                                                                                         1921 GGGAGTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCTACTGCAAATGGCAGTTTTAAT 1980
                                                                                                                                                                                                                                 1981 CTTATCTTTTGGCTTCTGCAGATGGTTGCAATTGATCCTTAACCAATAATGGTCAGTCCT 2040
                                                                                                                                                                                                                                                                                      2041 catctctgtcctgcttcataggtgccaccttgtgtgttttaaagaagggaagctttgtacc 2100
                                                                                                                                                                                                                                                                                                                                                                                     2101 tttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                       2101 TITAGAGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGATTT 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2161 cttgctttggggaaaaagaatgatgctatgaaattggtggtggtgttatttgagaagata 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2221 atcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagt 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2221 ATCATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCAAAATACAGCTATGAAGT 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ratain, M.J., Innocenti, F. and Iyer, L. Flavopiridol drug combinations and methods with reduced side
                                                                                                                                                                                  1981 cttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcct
                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2281 GCTGGGCAAGTTTACTTTTTTCTGATGTTTCCTACAACT 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2281 gctgggcaagtttacttttttttttgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         670 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent: WO 0180896-A 3 01-NOV-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AX286764 2320 bp
Sequence 3 from Patent WO0180896.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ARCH DEVELOPMENT CORPORATION (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YGYRKCLGKKGRVKKAHKSKTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    547 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AX286764.1 GI:17048799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         495 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ratain, M.J
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         608 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AX286764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            effects
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AX286764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                 쉼
                                                                                                                                                                                                                                                                                    δŏ
                                                                                                                                                                                                                                                                                                                                8
                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

100.0%; Score 2320; DB 6; Length 2320;

Query Match

```
1021 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaa 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           961 aaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtac 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           781 acggactttgttttggactatcccaaaccgtgatgcccaacatgatctcattggtggt 840
                                                                                                                                                                                                                                                 541 cactatottgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctc 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           721 ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             781 ACGGACTTTGTTTTGGACTATCCCAAACCCGTGATGCCCAACATGATCTTCATTGGTGGT 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          841 atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901 ggagaacatggaattgtggttttctcttttgggatcaatggtctcagaaattccagagaag 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          901 GGAGAACATGGAATTGTGGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAGAAG 960
                                                                                                                                                                                                                                                                                                                                     301 catgotoaatggaaagcacaagtacgaagtatatattototattaatgggttoatacaat 360
                                                                                                                                                                                                                                                                                                                                                                                                481 ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 601 ttagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttg 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  121 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcaggggggatgag 180
                                                                                                                                                                                                                  121 GGGAGCCACTGGTTCACCATGAGGTCGGTGGTGGAGAAACTCATTCTCAGGGGGCATGAG 180
                                                                                                                                                                                                                                                                                                               241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300
                                                                                                                                                                                                                                                                                                                                                                                                                                            421 gaatacttaaaggagagttettttgatgeagtgtttetegateettttgataaetgtgge 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541 CACTATCTTGAAGAAGGTGCACAGTGCCCTGCTCTTTTCCTATGTCCCAGAATTCTC 600
                                                                                                                  61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120
                                                                                                                                                  61 TGTCTGCTGCTGACCTGTGGCTTTGCCGAGGCAGGGAAGCTACTGGTAGTGCCCATGGAT 120
                                                1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60
                0; Gaps
                                                                                1 CTCAGCTGCAGTTCTCTGATGGCTTGCACAGGGTGGACCAGCCCCCTTCCTCTATGTGTG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Indels
100.0%; Pred. No. 0; ive 0; Mismatches
                   Matches 2320; Conservative
   Best Local Similarity
                                                                                                                                                  q
                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             рp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ob
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          원
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                    셤
                                                                                                                     ð
                                                                                                                                                                                    ò
                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
```

```
/translation-"MacTGWTSPLPLCVCLLLTCGFAEAGKLLVVPWDGSHWFTWRSV
VEKLILEGHEVVVVMPEVSWQLGRSLNCTVKTYSTSYTLEDLDREFKAFAHAQWKAQV
RSIYSLLMGSYNDIFDLFFSNCRSLFKDKKLVEYLKESSFDAVFLDPFDNCGLIVAKY
                                                                                                                             FSLPSVVPARGILCHTLEBGAQCPAPLSYVPRILLGFSDAMTFKERVRNHTMHLEBHL
LCHRFFKNALEIASEILQTPVTEYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
                                                                                                                                                                             CHQGKPLPMEFBAYINASGEHGIVVFSIGSMYSEIPEKKAMALADALGKIFOTVUMRY
TGTRPSNLANNTILVKWLPQNDLLGHPMTRAFITHAGSHGVYESICNGVPMYMMPLFG
DQMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
                                                                                                                                                                                                                                                 PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgccatggat 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 TGTCTGCTGCTGACCTGTGGCTTTGCCGAGGCAGGGAAGCTACTGGTAGTGCCCATGGAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 121 GGGAGCCACTGGTTCACCATGAGGTCGGTGGAGAACTCATTCTCAGGGGGCCATGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 CATGCTCAATGGAAAGCACAAGTACGAAGTATATATTCTCTATTAATGGGTTCATACAAT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 cactatettgaagaaggtgeaeagtgeeetgeteetettteetatgteeeegaattete 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      541 CACTATCTTGAAGAAGGTGCACAGTGCCCTGCTCCTTTCCTATGTCCCAGAATTCTC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601 tlagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttg 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 661 gaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaatt 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            421 gaatacttaaaggaggttcttttgatgcagtgtttctcgatccttttgataactgtggc 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 421 GAATACTTAAAGGAGAGTTCTTTTGATGCAGTGTTTCTCGATCCTTTTGATAACTGTGGC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                481 ttaa:tgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481 TTAATTGTTGCCAAATATTTCTCCCTCCCTCGTGGTCTTCGCCAGGGGAATACTTTGC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 ctcayctgcagttctctgatggcttgcacagggtggaccagcccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 CTCASCTGCAGTTCTCTGATGGCTTGCACAGGGTGGACCAGCCCCTTCCTCTATGTGTG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           181 GTGGTTGTAGTCATGCCAGAGGTGAGTTGGCAACTGGGAAGATCACTGAATTGCACAGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              301 catgotoaatggaaagcacaagtacgaagtatatattototattaatgggttcatacaat
                                                                                                                                                                                                                                                                                                                                                                                         Ouery Match 100.0%; Score 2320; DB 6; Length 2320; Best Local Similarity 100.0%; Pred. No. 0; Marches 2320; Conservative 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             0; Indels
                                                                                                                                                                                                                                                                                              670 t
                    /protein_id="CAD12274.1"
/db_xref="GI:17048798"
                                                                                                                                                                                                                                                                        YGYRKCLGKKGRVKKAHKSKTH'
495 c 547 g (
/codon_start=1
                                                                                                                                                                                                                                                                                              ø
                                                                                                                                                                                                                                                                                              809
                                                                                                                                                                                                                                                                                              BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ор
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

õ

à g à

à g õ ò

```
961 aaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtac 1020
                                                                                                                                                                                                                                                                                                                                                                                                            1021 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaa 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                            1021 ACTGGAACCCGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1081 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1141 gtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcag 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1201 atggacaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctggaa 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1261 atgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaagttacaag 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1381 GCGGTGTTCTGGGTGGAGTTTGTGATGAGGCACAAGGGCGCGCCACACCTGCGCCCCGCA 1440
                                                                                                                                                                                                                                                                                                                                                          961 AAAGCTATGGCAATTGCTGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGCGGTAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1201 AIGGACAAIGCAAAGCGCAIGGAGACIAAGGGAGCIGGAGTGACCCIGAAIGIICIGGAA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1321 GAGAACATCATGCGCCTCTCCAGCCTTCACAAGGACCGCCGGGTGGAGCCGCTGGACCTG 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1381 gccgtgttctgggtggagtttgtgatgaggcacaagggcgccacacacctgcgccccgca 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1441 gcccacgacctcacctggtaccagtaccattccttggacgtgattggtttcctcttggcc 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1441 GCCCACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCC 1500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1501 gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1501 GTCGTGCTGACAGTGGCCTTCATCACCTTTAAATGTTGTGCTTATGGCTACCGGAAATGC 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1561 ttggggaaaaaagggcgagttaagaaagcccacaaaatccaagacccattgagaagtgggt 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1561 TTGGGGAAAAAAGGGCGAGTTAAGAAAGCCCACAAATCCAAGACCCATTGAGAAGTGGGT 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1621 gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GGGAAATAAGGTAAAATTTTGAACCATTCCCTAGTCATTTCCAAACTTGAAAACAGAATC 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            agtgttaaattcattttattcttattaaggaaatactttgcataaattaatcagccccag 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1681 AGTGTTAAAITCATTTATTCTTATIAAGGAAATACTTTGCATAAATTAATCAGCCCCAG 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1741 agtgotttaaaaaattotottaaataaaaaataatagaotogotagtoagtaaagatatt 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcaga 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1801 GAATATGTAICGTGCCCCCCCCCGGTGTCTTTGAICAGGATGACATGTGCCATTTTTCAGA 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1861 ggacgtgcajacaggctggcattctagattactttcttactctgaaacatggcctgttt 1920
781 acggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggt 840
                                                                                                                                                                                                      99agaacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaag 960
                                                                                                                                                                                                                                                        901 GGAGAACATGGAATTGTGGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAGAAG 960
                                                  781 ACGGACTITGITTTGGACTATCCCAAACCCGTGATGCCCAACATGATCTTCATTGGTGGT 840
                                                                                                    841 atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900
                                                                                                                                                    841 ATCAACTGCCATCAGGGAAAGCCGTTGCCTATGGAATTTGAAGCCTACATTAATGCTTCT 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1681
                                                                                                                                                 g
                                                                                                    à
                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
#$5-09-835-082-3.rge
```

```
AF039138 Felia cat
AF039178 Pelia cat
AF03178 Pelia cat
U16818 Mus musculu
U09101 Oryctolagus
MA407 Rat bilirub
AF461737 Rattus no
U45604 Human UDP-g
J02612 Rat UDP-glu
U20551 Rattus norv
                                                                                                                                                                                                                                                                                                                 U89508 Human UDP-9
AF461735 Rattus no
BC019434 Mus muscu
AF011902 Oryctolag
                                                                                                                                                                                                                                                                                                                                                                                                                                                            AC006985 Homo sapi
AC026497 Homo sapi
AF297093 Homo sapi
U75903 Rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear PAT 21-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                       L27122 Mus musculu
B018478 Ovis arie
                                                                    AF462268 Homo sapi
BC020971 Homo sapi
S55985 Homo sapien
AF104336 Macaca fa
                                                                                                                                                                                                                                                                                                                                                                                                                           AF461738 Rattus no
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapi
Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             J05132 Rat 3-methy
                                                                                                                                                                      MS7899 Human bilir
AX336711 Sequence
                                                                                                                                                                                                                                             AF030310 Homo sapi
U89507 Human UDP-9
                                                                                                                                                                                                                                                                                                                                                                                                                                          M84124 Human UDP-9
AC006985 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Macaca mu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                        AK025403 Homo sapi
M57951 Human bilir
                                                                                                                                                                                                                              J04093 Homo sapien
                                                                                                                                                                                                                                                                               AF104338 Macaca fa
AF104337 Macaca fa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Macaca fa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Macaca mu
                                AF056188 Homo sapi
                                                       Homo sapi
AX286762 Sequence
                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 (sites) Ratain, ......., cucaillini; HOMIDIDAGE; HOMO. Ratain, M.J., Innocenti, F. and Iyer, L. Flavopiridol drug combinations and methods with reduced side effects
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF360121
AF104339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC026497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AY029169
                                                   AF462267
                                                                                                                                                                                                                                                                                                                                                                                                          AB018478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AF297091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Patent: WO 0180896-A 1 01-NOV-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2320 bp
Sequence 1 from Patent W00180896.
AX286762
AX286762.1 GI:17048797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
19. .1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ARCH DEVELOPMENT CORPORATION (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RATUDPGTA
AF461737
                                                                                                                                                                                                            AX336711
HUMUGT1FA
AF030310
                                                                                                                                                                                                                                                                                                                                                                                                        AB018478
AF461738
HUMUGT03
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AC006985
AC026497
AF297093
RNU75903
                                                                                                                                                                                                                                                                                                                   HSU89508
AF461735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RATUDPGT
RNU20551
                                                                                                                                                         HUMHUGBR2
                                                                                                                                                                                                                                                              HSU89507
AF104338
AF104337
                                                                                                                                                                                                                                                                                                                                                                      AF011902
MUSUGIP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AF039138
AC091778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MMU16818
                                                                                                                                                                                             HUMHUGBR1
                                                                                                                                                                                                                                                                                                                                                         BC019434
                                                                                                                         AF104336
 AX286762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AF104339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AY029169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HSU42604
                                    AF056188
                                                                                                                                            AK025403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF360121
                                                     AF462267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OCU09101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10
                                                                                                                                                                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                                                                                                                                           10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           43.3 176619
43.3 198872
44.3 198872
37.9 148438
37.6 1602
37.6 1647
37.6 1647
37.6 1642
37.4 18826
34.2 2816
34.2 2816
33.3 1765
33.4 1765
33.6 1244
33.6 1244
33.6 2239
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .2320
                                                                                                                                                                                                                                                                                                                                                                                                                                          1561 68770
                  22320
22320
22320
22320
22320
22320
22320
22320
22320
22320
22320
22320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2320
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
2020
                                                                                                                                                                                                                                                                                                                                                                      1590
2155
                                                                                                                                                                                                                                                                                                                                                                                                          2332
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
100.0
100.0
100.0
95.6
94.6
94.6
93.0
89.5
70.5
70.5
66.3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    868.2
819.8
799.8
                                                                                                                                                                              1629
                                                                                                                                          1895.8
                                                                                                                                                           1636.6
                                                                                                                                                                                             1610.8
                                                                                                                                                                                                                                                1493.8
                                                                                                                                                                                                                                                                                                    1470.6
                                                                                                                                                                                                                                                                                                                                                                                                                                          1004.4
1004.4
1004.4
1004.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    878.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        788.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             772.2
                                                                                                                                                                                                                                                                  1484.
                                                                                                                                                                                                                                                                                                                     1463.
                                                                                                                                                                                                                                                                                                                                      1157.
                                                                                                                                                                                                                                                                                                                                                                                           1110.
                                                                                                                                                                                                                                                                                                                                                         1129.
                                                                                                                                                                                                                                                                                                                                                                        1123.
                                                                                                                                                                                                                                 1539.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       872.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT AX286762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TITLE
                                                                                                                                                                                                                                                33
35
36
37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         38
39
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ပ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ט ט
                                                                                                                                        (without alignments)
5885.745 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                 1 ctcagctgcagttctctgat.....ttctgatgtttcctacaact 2320
                                                                                                                           August 21, 2002, 11:57:31; Search time 8248.67 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Description
                                                                                                                                                                                                                                                                                                                                                         3595312
                  GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                     1797656 segs, 10463268293 residues
                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                       OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                  IDENTITY_NUC Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_htg_other:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_htgo_inv:*
                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_htg_hum:*
em_htg_inv:*
                                                                                                                                                                                             US-09-835-082-3
2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query
Score Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_ba:*
em_fun:*
em_hum:*
em_in:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   gb_htg:*
gb_in:*
gb_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            b_sts:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em pat:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            em_sts:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        em_pl:*
em_ro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gb_ov:*
gb_pat:*
gb_ph:*
gb_p1:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gb_un:*
gb_vi:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_ph:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               em_un:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_or:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3b_ro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              dp_sy:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   *:mm_ma
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_ov:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gb_ba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gb_pr:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GenEmbl:*
                                                                                                                                                                                                            Perfect score:
                                                                                                                                                                                                                                                                  Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Database :
                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                 Sequence:
                                                                                                                             Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Result
```

	· · ·

Oy 1459 taccagtaccattcottggacgtgattggtttcctcttggccgtcgtgctgacagtggcc 1518

Db 1441 TACCAGTACCATTCCTTGGACGTTCTCTCTCTCGTCGTGCTGCTGACTGGCC 1500

Qy 1519 ttcatcacctttaaatgttggcttatggtaaatgcttggggaaatgcttggggaaaaagagggga 1578

Db 1501 TTCATCACCATTAAATGTTGCTTATGGCTACGGAAATGCTTGGGGAAAAAAGGGCGA 1560

Qy 1579 gttaagaaagcccacaaatccaagacccattga 1611

Db 1561 GTTAAGAAATCCACAAATCCATTGGTTGTGTTATGGTTATGGTTGGGGAAAAAGGGCGA 1560

Search completed: August 21, 2002, 11:57:31

50b time: 32834 sec

```
/translation-"martowispiplcvslilitceparacklivvpwdcshwftmgsv
Veklilrghevvvvmpevswqlckslnctvktystsytledldrefmpradagnkaqv
Rslfslflsssngffnlffshcrslfndrrlveylkessfdavfldpfdacalivaky
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FCQYFSKNALEIASEILQTPVTAYDLYSHTSIWLLFRDFYLDYPKPYWPNNIFIGGIN
CHGGKPLPMEFEAYINASGEHGIVVFSLGSMYSEIPEKKAMAIADALGKIDQTVLMRY
TGTRPSNLANNTILVKWLPONDLLGHPMTRAFITHAGSHGVYESICNGVPMVMPLFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
PLDLAVEWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FSLPSVVFARGIGCHYLEEGAQCPAPLSYVPRILLGFSDAMAFKERVRNHILHLEEHL
                                                                                                                                                                                                                                                                                                                                                                                     Submitted (16-0CT-1997) Pharmacology and UCSD Cancer Center, University of California, San Diego, 9500 Gilman Dr. BSB 4th Floor Rm 4021, La Jolla, CA 92099-0636, USA Location/Qualifiers
                                                                  Eukaryota; Metazoa; Chordata; Cranlata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 1593)
                                                                                                                                        Strassburg, C.P., Manns, M.P. and Tukey, R.H.
Expression of the UDP-glucuronosyltransferase 1A locus in human colon. Identification and characterization of the novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        139 atgaggtcggtggtggagaactcattctcagggggcatgaggtggttgtagtcatgcca 198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     121 ATGCAGTCGGTGGTGGAGAACTTATCCTCAGGGGGCATGAGGTGGTTGTAGTCATGCCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   181 GAGGIGAGTIGGCAACTGGGAAAATCACTGAATIGCACAGTGAAGACTTACTCAACCTCA 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   259 tataccetggaggatetggacegggagtteaaggettttgeecatgeteaatggaaagea 318
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   319 caagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttattt 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 ATGCTCGCACAGGGTGGACCAGCCCCATTCCCCTATGTGTTTCTCTGCTGCTGACCTGT 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             19 atggettgcacagggtggaccagccccttcctctatgtgtgtgtctgctgctgacctgt 78
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        199 gaggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match 64.4%; Score 1493.8; DB 9; Length 1593; Best Local Similarity 96.1%; Pred. No. 0; Matches 1531; Conservative 0; Mismatches 62; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="UDP-glucuronosyltransferase 1A8"
/protein_id="AAB84259.1"
/db_xref="GI:2613044"
                                                                                                                                                                                                                extrahepatic UGT1A8
J. Biol. Chem. 273 (15), 8719-8726 (1998)
96204857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   442 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YGYRKCLGKKGRVKKAHKSKTH"
371 c 390 q 4
                                                                                                                                                                                                                                                                                                                                     Strassburg, C.P. and Tukey, R.H.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             390 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                             (bases 1 to 1593)
                                                                                                                                                                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .1593
                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             390 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BASE COUNT
                                                                                                                                          AUTHORS
                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                  REFERENCE
                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                        PUBMED
                                                                                                                                                                                                                                                                                                                REFERENCE
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
```

```
1099 ccgatgacccqtgcctttatcacccatgctgqttcccatggtgtttatgaaagcatatgc 1158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1159 aatggogttcccatggtgatgatgccttgtttggtgatcagatggacaatgcaaagcgc 1218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gatgettteggeaaaateeeteagaeagteetgtggeggtaeaetggaaeeegaeeateg 1038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1081 CCGATGACCCGTGCCTTTATCACCCATGCTGCTTCCCATGGTGTTTATGAAAGCATATGC 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1219 atggagactaagggagctggagtgacctgaatgttctggaaatgacttctgaagattta 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1201 ATGGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTGGAAATGACTTCTGAAGATTTA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1279 gaaaatgetetaaaageagteateaatgacaaaagttacaaggagaacateatgegeete 1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1339 tccagccttcacaaggaccgcccggtggagccgctggacctggccgtgttctgggtggag 1398
                                                                                                                                                                                                           619 atgactttcaaggagaggagtacggaaccacatcatgcacttggaggaacatttattatgc 678
                                                                                                                                                                                                                                                                                                                                       1321 TCCAGCCTTCACAAGGACCGCCGGTGGAGCCGCTGGACCTGGCCGTGTTCTGGGTGGAG 1380
                                                              439 tottttgargcagtgtttotcgatccttttgataactgtggcttaattgttgccaaatat 498
                                                                                           421 TCTTTTGATGCGGTGTTTCTTGATCCTTTTGATGCCTGTGCGTTAATTGTTGCCAAATAT 480
                                                                                                                                                                                          559 gcacagtg:cctgctcctcttcctatgtccccagaattctcttagggttctcagatgcc 618
                                                                                                                                                                                                                                                                                   679 caccgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttacg 738
                                                                                                                                                                                                                                                                                                                                                                                  739 gagtatgat:ctctacagccacacatcaatttggttgttgtggacggactttgttttggac 798
                                                                                                                                                                                                                                                                                                                                                                                                               721 GCATATGATCTCTACAGCCACACATCATTTGGTTGTTGCGAACAGACTTTGTTTTGGAC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          859 aagccgttgcctatggaatttgaagcctacattaatgcttctggagaacatggaattgtg 918
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       919 gttttctcttttgggatcaatggtctcagaaattccagagaagaagctatggcaattgct 978
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    901 GTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAAAAAGAAAAGCTATGGCAATTGCT 960
                                                                                                                                                                                                                                                                                                                                                                                                                                              799 tatcccaamcccgtgatgcccaacatgatcttcattggtggtatcaactgccatcaggga 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841 AAGCCATTGCCTATGGAATTTGAAGCCTACATTAATGCTTCTGGAGAACATGGAATTGTG 900
                                                            á
                                                                                           ద
                                                                                                                                                       g
                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                        ογ
                                                                                                                                                                                                                                                                                   Вþ
                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                          ò
                                                                                                                                                                                        å
                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
```

AATACTACA teaaggettet 1 1 1 2 1 3 1 4 1 4 1 6 1 6 1 7 1 8 1 9 1 1 1 1 1 1 1 1 1	AATACTACA AATACTACA Lcaaggctt ACAATCAT tgggttcat AGTACAGGA aagacaaaa	TCTATCCAGTGCCGTATGACCAAGAAGACCTGAAGAACCGTT 3 ctcaatggaaagcacaagtacgaagtatatattctctattaa 3 ancatagramagramagramagramagramagramagramagr	NGCVAILATICIAACIGUICICAAACAG 41 Lattttttcaaattgcaggagttgtta 40 IGHACTTCATCAACIGCAGAGCCTCCTGC 47	gaatacttaaaggagattctttgatgcagtgtttctcgatc	9gcttaattgttgccaaatatttctccctccctccgtggtcttcg 5	gocactatcttgaagaaggtgcacagtgccctgcttcct 58 	otettagggtteteagatgeeatg RACACAAAGTTTTCAGACCACATG	gaggaacatttattatgccaccgttttttcaaaatgccctag 70 	ctccaaacacctgttacggagtatgatctctacagccacacat 76	gaacggactttgttttggactatcccaaacccgtgatgcccaaca 82 	gtatcaactgccatcagggaaag GTATCACTGTAAGAGGGAAA	ctggagaacatggaattgtgttttctctttgggatcaatggtct 94 		cactggaacccgaccatcgaatcttg 	caaaacgatctgcttggtcacccgatgacccgtgctttatcacc 1	ggtgtttatgaaagcatatgcaatggc 	cagatggacaatgcaaagcgcatggagacta 	gaaatgacttctgaagatttagaaaatgctcta }	aaggagaacatcatgcgcctctccagccttcacaaggaccgcccgg 136
	2 9 2 9 2 9 8 9 9 9 9 9 9 9 9 9 9 9 9 9	AATACTACA tcaaggett	tgggttcat AGTACAGGA	aagacaaaaaattagi AGGACAGGGACACCC	ctttgataactgtgg 	ccaggggaatactttgcca TCAGGGGTTTTCCGTGTTC	atgtececagaattetett 	accacatcatgcacttggaggaae 	4 aaatagcctctgaaattctccaa: 9 AACTCGCATCAGCTGTCCTCAAG	4 caatttggttgttgcgaac 6 CTGTTTGGCTGTTAAGATA	4 tgatcttcattggtggtatca 	4 cctacattaatgcttctggag 	4 cagaaattccagagaagaaag 	4 cagtcctgtggcggtacactgg 	4 ttaagtggctacccaaaacg 	4 atgctggttcccatggtgtttat 	4 ccttgtttggtgatcagatggac 	4 cctgaatgttctggaatg 	4 atgacaaaagttacaaggagaa

```
2262 caaaatacagctatgaagtgctgggcaagtttac.ttttttctgatgtttcctacaact 2320
                                                                                                         cccattgagaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttcca 1663
                                                                                                                                                                                                                                                                                                                                                                                                1855 TAGTCAGTAAAGATATTTGAATATGTATCGTGCCCCCTCCGGAGTCTTTGATCAGGATGA 1914
                                                                                                                                                                                                                                                                                                                                                                                                                                   1843 catgigccattiticagaggacgigcagacaggciggcaticiagatiactiticiact 1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1903 ctgaaacatggcctgtttgggaagtgcgggattcaaaggtggtcccaccgctgccctact 1962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1963 gcaaatggcagttttaatcttatcttttggcttctgcagatggttgcaattgatccttaa 2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2035 GCAAATGGCAGTTTTAATCTTATCTTTTGGCTTCTGCAGATGGTTGC-ATTGATCCTTAA 2093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2023 ccaataatggtcagtcctcatctctgtcctg-cttcataggtgccaccttgtgtgtttaa 2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1094 CCAATAATGGTCACCTCATCTCTGTCTCTGACTTCATAGGTGCCACCTTGTG-GTTTAA 2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2142 tgagaacagcatatgatttcttgctttggggaaaaagaatgatgctatgaaattggtggg 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1496 CACACCTGCGCCCCGCACCACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGA 1555
                                                                                                                                                                1544 atggctaccggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaatccaaga 1603
                                                                                                                                                                                                                                  1724 aaattaatcagccccagagtg-ctttaaaaaattctcttaaataaaaataatagactcgc 1782
                                                                                                                                                                                                                                                                                                                                         1783 tagtcagtaaagatatttgaatatgtatcgtgccccctccggtgtctttgatcaggatga 1842
                                                     1424 cacacctgcgccccgcagcccacgacctcacctggtaccagtaccattccttggacgtga 1483
                                                                                                                                                                                                                                                                       1664 aacttgaaaacagaatcagtgttaaattcatttattcttattaaggaaatactttgcat 1723
1364 tggagccgctggacctggccgtgttctgggtggagtttgtgatgaggcacaagggcgcgc 1423
                                                                                                                                                                                                                       1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                  임
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                             g
                                                                                 q
                                                                                                               δλ
                                                                                                                                     δ
                                                                                                                                                                   ö
                                                                                                                                                                                          연
                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                              염
                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                  ò
```

PRI 26-0CT-2000

linear

mRNA

Homo sapiens UDP-glucuronosyltransferase 1A8 (UGT1A8) mRNA,

AF030310.1 GI:2613043

complete cds. AF030310

DEFINITION

ACCESSION

VERSION

RESULT 15

AF030310

1593 bp

```
1256 CCTTGTTTGGTGATCAGATGGAAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGA 1315
                                                                                      1304 atgscaaaagttacaaggagaacatcatgcgcctctccagccttcacaaggaccgcccgg 1363
                                                                                                      1364 tggagccgctggacctggccgtgttctgggtggagtttgtgatgaggcacaagggcgcgc 1423
                                                                                                                                                                            1436 reGAGCCGCTGGACCTGGCCGTGTTCTGGGTGGAGTTTGTGATGAGGCACAAGGGCGCGC 1495
                                                                                                                                                                                                                           1484 ttggtttcctcttggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgctt 1543
                                                                                                                                                                                                                                                                                                                              1424 cacacctgcgccccgcagcccacgacctcacctggtaccagtaccattccttggacgtga 1483
                                                                                                                                                                                                                                                                                                 1556 TIGGITICCICTIGGCCGTCGTGACAGTGGCCTTCATCACCTTTAAATGTTGTCCTT 1615
                                                                                                                                                                                                                                                                                                                                                                                          1604 cccattgagaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttcca 1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1664 aacttgaaaacagaatcagtgttaaattcattttattcttattaaggaatactttgcat 1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1676 CCCATTGAGAGGTGGGTGGGAATAAGGTAAAATTTTGAACCA-TCCCTAGTCATTTCCA 1734
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1735 AACTTGAAAACAGAATCAGTGTTAAATTCATTTTATTCTTATTAAGGAAATACTTTGCAT 1794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1724 aaattaatcagccccagagtg.ctttaaaaaattctcttaaataaaaataatagactcgc 1782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1915 CATGTGCCATTTTTCAGAGGACGTGCAGACAGGCTGGCATTCTAGATTACTTTCTTACT 1974
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2035 GCAAATGGCAGTTTTAATCTTATGCTTCTGCAGATGGTTGC-ATTGATCCTTAA 2093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2023 ccaataatggtcagtcctcatctctgtcctg-cttcataggtgccaccttgtgtgtttaa 2081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2142 tgagaacagcalatgatttcttgctttggggaaaaagaatgatgctatgaaattggtggg 2201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2213 TGAGAACAGCATATGATTTCTTGCTTTGGGAAAAAGAATGATGCTATGAAATTGGTGGG 2272
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2262 caaaatacagctatgaagtgctgggcaagtttac-tttttttttgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1843 catgigccatiticagaggacgigcagacaggciggcaticiagatiacititicitaci 1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1963 gcaaatggcagttttaatcttatctttggcttctgcagatggttgcaattgatccttaa 2022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2094 CCAATAATGGTCAGTCCTCTTTCTGTCCTGACTTCATAGGTGCCACCTTGTG-GTTTAA 2152
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2333 CAAAATACAGCTATGAAGTGCTGGGCAAGTTTACTTTTTTTCTGATGTTTCCTACAACT 2392
a
                                                                                                                ద
                                                                                                                                                ò
                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                   g
                                                                                                                                                                         유
                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
```

```
Homo sapiens phenol UDP-glucuronosyltransferase (UDPGT) mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            IVEVLSDRGHEIVVVVPEVNLLLEKEYKYYTRKIYPVPYDQEELKNRYÖSFGNNHFAER
SFLTAPQTEYRNMIVIGLYFINCQSLLQDRDTLNFFKESKFDALFTDPALPCGVILA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /translation="MACLLRSFQRISAGVFFLALWGMVVGDKLLVVPQDGSHWLSMKD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ä
                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47 ttcctctatgtgtgtgtctgctgctgacctgtggctttgccgaggcagggaagctactgg 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119 TITCIGCAGGGITITCTICITAGCICTITGGGGCAIGGITGIAGGIGACAAGCIGCIGG 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        107 tagtgcccatggatgggagccactggttcaccatgaggtcggtggtggagaaactcattc 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           167 tcagggggcatgaggttgttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         239 ACCGGGGTCATGAGATTGTAGTGGTGGTGCTGAAGTTAATTTGCTTTTGAAAGAATACA 298
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              227 tgaattgcacagtgaagacttattcaacttcatataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                              Harding, D., Fournel-Gigleux, S., Jackson, M.R. and Burchell, B. Cloning and substrate specificity of a human phenol UDP-glucuronosyltransferase expressed in COS-7 cells Proc. Hatl. Acad. Sci. U.S.A. 85 (22), 8381-8385 (1988) 89042187
                                                                                                                                                                                                                                                                                                                                                     On Jan 18, 1995 this sequence version replaced g1:340517.
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            66.3%; Score 1539.2; DB 9; Length 2422; 82.0%; Pred. No. 0; Live 0; Mismatches 398; Indels 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="UDP-glucuronosyltransferase"
/protein_id="AAA61251.1"
/db_xref="GI:624725"
                                                                                                                                    UDP-glucuronosyltransferase; phenol.
Homo sapiens kidney cDNA to mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PYGYPKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="kidney"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .number="2.4.1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  555 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "UDPGT"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /dene="UDPGT'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="UDPGT"
                                                                                                                                                                                                                                      (bases 1 to 2422)
                                                                                                                 J04093.1 GI:624724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    516 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .1683
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 1870; Conservative
                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  653 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                             source
                                                     DEFINITION
                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
RESULT 14
              HUMUGT1FA
                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                    MEDLINE
                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gene
                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
```

```
linear PAT 09-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cancer gene determination and therapeutic screening using signature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                  2045 tctgtcctgcttcataggtgccaccttgtgtgttttaaagaagggaagctttgtacctta 2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                               1811 ATGTATCGTGCCCCCTCCGGTGTCTTTGATCAGGATGACATGTGCCATTTTTCAGAGGAC 1870
                                                                                              1985 tcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatc 2044
                                                                                                                                                                                                                                                  2051 TCTGTCCTGCTTCATAGGTGCCACCTTGTGTGTTTAAAGAAGGGAAGCTTTGTACCTTTA 2110
                                                                                                                                                                                                                                                                                                                                                                                     2105 gagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttcttg 2164
                                                                                                                                                                                                                                                                                                                                                                                                                         2111 GAGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGATTTCTTG 2170
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2171 CTTTGGGGAAAAGAATGATGCTATGAAATTGGTGGGGGGGTGTATTTGAGAAGATAATCA 2230
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2225 ttgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctg 2284
                                                                         1865 gigcagacaggciggcattciagattactiticitacicigaaacaiggccigitiggga 1924
1805 atgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggac 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Young, P.E., Augustus, M., Carter, K.C., Ebner, R., Endress, G., Horrigan, S., Soppet, D.R. and Weaver, Z.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2285 ggcaagtttactttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2291 GGCAAGTTTACTTTTTTCTGATGTTTCCTACAACT 2326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : WO 0194629-A 7220 13-DEC-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence 7220 from Patent W00194629. AX336711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /organism="Homo sapiens"
/db_xref="taxon:9606"
516 c 555 g 698
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2422 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Avalon Pharmaceuticals (US)
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AX336711.1 GI:18127430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               653 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX336711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AX336711
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORIGIN
                                                                                                                                                                                                                               ολ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                셤
                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                              셤
                                                                                                                                                                                                                                                                                                                                                                                     δ
                                                                                                                                                                                                                                                                                                                                                                                                                         임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
  õ
                                                                                                                                                      à
                                                                                                                                                                                                                                                                     g
```

```
.;
8
                        Pred: No. 0;
0; Mismatches 398; Indels 12; Gaps
                                                                                        47 ttcctctatgtgtgtgtctgctgctgacctgtggctttgccgaggcagggaagctactgg 106
66.3%; Score 1539.2; DB 6; Length 2422;
                        82.0%;
                                         Matches 1870; Conservative
                        Best Local Similarity
    Query Match
```

```
944 cagaaattccagagaaagatatggcaattgctgatgcttgggcaaaatccctcaga 1003
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1136 TTAAGTGGCTACCCCAAAACGATCTGCTTGGTCACCCGATGACCCGTGCCTTTATCACCC 1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1124 atgctggttcccatggtgttttatgaaagcatatgcaatggcgttcccatggtgatgatgc 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1184 ccttgtttggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtga 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1016 CAGAAATTCCAGAGAAAGAAAGCTATGGCAATTGCTGATGCTTTGGGCAAAAACCCTCAGA 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1004 cagiccigiggiaggiacaciggaacccgaccaicgaaictigcgaacaacacgaiaciig 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1064 ttaagtggctaccccaaaacgatctgcttggtcacccgatgacccgtgcctttatcaccc 1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1196 AFGCTGGTTCCCAFGGFGTTTAFGAAAGCATAFGCAAFGGCGTTCCCAFGGTGATGC 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       659 ACATICCCAGGIGCIACACAAAGITITICAGACCACAIGACITITITCCCAACGAGIGGCCA 718
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    644 accacatcatgcacttggaggaacatttattatgccaccgttttttcaaaaatgccctag 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  719 ACTICCTIGITAATITGIIGGAGCCCIAICIAITITAITGICIGITITCAAAGIAIGAGA 778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     779 AACTCGCATCAGCTGTCCTCAAGAGAGATGT---GGATATAATCACCTTATCAGAGGTCT 835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         824 tgatcttcattggtggtatcaactgccatcagggaaagccgttgcctatggaatttgaag 883
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              884 cctacattaatgcttctggagaacatggaattgtggttttctctttggggatcaatggtct 943
                                                                                                                                                                       227 tgaattgcacagtgaagacttattcaacttcatataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                                                       287 tcaaggcttttgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaa 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            404 aagacaaaaattagtagaatacttaaaggagagttetttgatgeagtgtttetegate 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 524 ccaggggaatactttgccactatcttgaagaaggtgcacagtgccctgctcctttcct 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   599 TCAGGGGTTTTCCGTGTTCCCTGGAGCATACATTCAGCAGAAGCCCAGACCCTGTGTCT 658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      104 aaatageetetgaaatteteeaaacaeetgttaeggagtatgatetetaeageeacaeat 763
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      764 caattiggtigtigcgaacggactitigtitiggactatcccaaacccgigatgcccaaca 823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     836 CIGITIGGCIGITAAGATATGACTTIGTGCTTGAATATCCTAGGCCGGTCATGCCCAACA 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             896 TGGTCTTCATTGGAGGTATCAACTGTAAGAAGAGGAAAGACTTGTCTCAGGAATTTGAAG 955
                                                                                                                                                                                                                           299 AATACTACACAAGAAAATCTATCCAGTGCCGTATGACCAAGAAGAGCTGAAGAACCGTT 358
                                                                                                                                                                                                                                                                                                                             359 ACCAATCATTTGGAAACAATCACTTTGCTGAGCGATCATTCCTAACTGCTCCTCAGACAG 418
                                                                                                                                                                                                                                                                                                                                                                            347 tgggttcatacaatgaca---tttttgacttattttttttcaaattgcaggagtttgttta 403
                                                                                                                                                                                                                                                                                                                                                                                                                             419 AGTACAGGAATAACATGATTGTTATTGGCCTGTACTTCATCAACTGCCAGAGCCTCCTGC 478
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             479 AGGACAGGGACACCCTGAACTTCTTTAAGGAGAGCAAGTTTGATGCTCTTTTCACAGACC 538
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             539 CAGCCTTACCCTGTGGGGTGATCCTGGCTGATTTTGGGCCTACCATCTGTGTACCTCT 598
                     179 TGGTCCCTCAGGACGGAAGCCACTGGCTTAGTATGAAGGATATAGTTGAGGTTCTCAGTG 238
                                                                       167 tcaggggggatgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                     239 ACCGGGGTCATGAGATTGTAGTGGTGGTGCTGAAGTTAATTTGCTTTTGAAAGAATACA 298
_
_
_
_
_
_
_
_
_
_
_
_
_
_
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                           g
                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                               ŏ
                                                                                                                                                                               ò
                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                 ŏ
```

```
/db_xref="GB8:G00-120-007"
/translation="MAVESQGGRPLVLGLLLCVLGPVVSHAGKILLIPVDGSHWLSML
GAIQQLQQRGHEIVVLAPDASLYIRDGAFYTLKTYPVPFQREDVKESFVSLGHNVFEN
                                                                                                                                                                                                                                           AQYLSLPTVFFLHALPCSLEFEATQCPRPFSYVPRPLSSHSDHMTFLQRYKNMIJAFS
QVFCLQVYXSPYATLASEFLQREVTVQDLLSSASVWLFRSDFVKDYPRPIMPNNVFVG
GINCLHQNPLSQPFEAT INASCERIGITVFSLGSMYSETPERKAMA ADALGKIFQTVL
WRYTGTRPS NIANITLUKWLPQNDLLGHPHTRAFITHAG SHGVY ESICNGVPWVMP
LFGDQMDNAKRMETKCAGVTLNVLEMYSEDLENALKATINDKSYKRYIMRLSSLHKDP
PVEPLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVJGFLLAVVLIVAPITFR
                                                                                                                                                                                                               DSFLORVIKTYKKIKKDSAMLLSGCSHLLHNKELMASLAESSFDVMLTDPFLPCSPIV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /standard_name="bilirubin UDP-glucuronosyltransferase isozyme 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 71 Tecrisoscecastrorectescaractestaraterectastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastrocastro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           128 actggttcaccatgaggtcggtggtggagaactcattctcaggggggcatgaggtggttg 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    131 ACTGGCTGAGCATGCTTGGGGCCATCCAGCAGCTGCAGCAGGGGGACATGAAATAGTTG 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    188 tagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         191 TCCTAGCACCTGACGCCTCGTTGTACATCAGAGGACGGAGCATTTTACACCTTGAAGACGT 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              248 attcaacttcatataccctggaggatctggaccgggagtt--caaggcttttgcccatgc 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              251 ACCCTGTGCCATTCCAAAGGGAGGATGTGAAAGAGTCTTTTGTTAGTCTCGGGCATAATG 310
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        306 tcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatgacat 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 366 ttttgact-tatttttttcaaattgcaggagtttgtttaaagacaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      371 ACTCTGCTATGCTTTTGTCTGGCTGTTCCCACTTACTGCACAACAAGGAGCTCATGGCCT 430
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      425 acttaaaggaggttcttttgatgcagtgtttctcgatccttttgataactgtggcttaa 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             485 ttgttgccaaatatttctccctccctggggtcttcgccaggggaatactttgccact 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         545 atcttgaagaaggtgcacagtgccctgctctttcctatgtccccagaattctcttag 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                611 CTCATTCAGATCACATGACCTTCCTGCAGCGGGTGAAGAACATGCTCATTGCCTTTTCAC 670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             665 aacatttattatgccaccgtttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Match 69.4%; Score 1610.8; DB 9; Length 2351; Local Similarity 82.7%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Pred. No. 0;
0; Mismatches 387; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="UDP-glucuronosyltransferase 1"
540 c 557 g 653 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CCAYGYRKCLGKKGRVKKAHKSKTH"
/protein_id="AAA63195.1"
/db_xref="GI:184473"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /EC_number="2.4.1.17"
/note="G00-120-007"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="G00-120-007"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="UGT1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches 1866; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .1614
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        윱
```

```
1025 gaacccga.catcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1084
                                                                                                                                                                                                                                                                                                                                                                                                                         1151 ATGAAAGCATATGCAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAGATGG 1210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1031 GAACCCGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAAAACG 1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1145 atgaaagcatatgcaatggcgttcccatggtgatgatgccttgtttggtgatcagatgg 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1271 CTTCTGAAGATTTAGAAATGCTCTAAAAGCAGTCATCAATGACAAAGTTACAAGGAGA 1330
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       965 ctatggcaittgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactg 1024
                                                                                                                                                                                                                                                                                                                                                                                                          1085 atctgcttygtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1205 acaatgcawagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatga 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1385 tgttctgggttggagtttgtgatgaggcacaagggcgcgccacacctgcgccccgcagcc 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1391 TGTTCTGGGTGGAGTTTGTGATGAGGGCGCGCCCACACCTGCGCCCCGCAGCCC 1450
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1265 cttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggaga 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1505 tgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1511 TGCTGACAGTGGCCTTCATCACCTTTAAATGTTGTGCTTATGGCTACCGGAAATGCTTGG 1570
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1625 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagcccagagtg 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1691 TIAAATICALTITATICTTATIAAGGAAATACTITGCATAAATTAATCAGCCCCAGAGTG 1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ctttaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttgaat 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1751 CTTTAAAAAATTCTCTTAAATAAAAATAAATAGACTCGCTAGTCAGTAAAAGATATTTGAAT 1810
671 AGAACTTTCTGTGCGACGTGGTTTATTCCCCGTATGCAACCCTTGCCTCAGAATTCCTTC 730
                                                 845 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 904
                                                                                                                                                                            725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784
                             à
                                                          g
                                                                                          ð
                                                                                                                       qq
                                                                                                                                                    ò
                                                                                                                                                                                    a
                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                         윱
                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
```

```
1784 agtcagtaaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgac 1843
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1124 atgetggtteceatggtgtttatgaaageatatgeaatggegtteceatggtgatgatge 1183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1424 cacacctgcgccccgcagcccacgacctcacctggtaccagtaccattccttggacgtga 1483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1484 ttggtttcctcttggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgtgtt 1543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1544 atggctaccggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaaatccaaga 1603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1566 ATGGCTACCGGAAATGCTTGGGGAAAAAGGGCGAGTTAAGAAAGCCCCACAAATCCAAGA 1625
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1604 cccattgagaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttcca 1663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1626 CCCATTGAGAAGTGGGTGGGAAATAAGGTAAAATTTTGAACCATTCCCTAGTCATTTCCA 1685
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1664 aacttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcat 1723
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1686 AACTIGAAAACAGAATCAGIGITAAATICATITIATICTIATIAAGGAAATACITIGCAT 1745
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1724 aaattaatcagccccagagtgctttaaaaaattctcttaaaaaataaaaataagactcgct 1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1064 ttaagtggctaccccaaaagatctgcttggtcacccgatgacccgtgccttatcaccc 1123
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1184 cettgtttggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtga 1243
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1206 CCTTGTTTGGTGATCAGATGGACAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGA 1265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1244 ccctgaatgttctggaaatgacttctgaagatttagaaaatgctctaaaagcagtcatca 1303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1304 atgacaaaagttacaaggagaacatcatgcgcctctccagccttcacaaggaccgccgg 1363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1506 TIGGITICCICITIGGCCGTCGTGCTGACAGTGGCCTTCATCACCTTTAAATGTIGTGCTT 1565
                                                                                                                                                                                                                                                                                                         944 cagaaattccagagaagaagctatggcaattgctgatgcttgggcaaaatccctcaga 1003
                                                                                                                                                                                                                                                                                                                                                     966 CAGAAATTCCAGAGAAGAAGCTATGGCAACTGCTGATGCTTTGGGCAAAATCCCTCAGA 1025
                                                                                                                                                                                                                                                                                                                                                                                             1004 cagteetgtggeggtacaetggaaceegaecategaatettgegaacaacaegataettg 1063
                                                                                                                                                                                                                                                                                                                                                                                                                                       1026 CAGTCCTGTGGCGGTACACTGGAACCCGACCATCGAATCTTGCGAACAACACGGTACTTG 1085
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1086 TTAAGTGGCTACCCCAAAACGATCTGCTTGGTCACCCGATGACCCGTGCCTTTATCACCC 1145
                                         726 AACTCGCATCAGCTGTCCTCAAGAGATGTGGGATATAATCACCTTATATCAGAAGGTCT 785
                                                                                                                                  824 tgatcttcattggtggtatcaactgccatcagggaaagccgttgcctatggaatttgaag 883
                                                                                                                                                                            846 IGGICTICATIGGAGGIATCAACIGIAAGAAGAGGAAAGACIIGICICAGGAATITGAAG 905
                                                                                                                                                                                                                     884 cctacattaatgcttctggagaacatggaattgtggttttctctttgggatcaatggtct 943
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                      g
                                                                                                                                    ò
                                                                                                                                                                              엄
                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                               Ω
                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
```

```
PRI 07-MAR-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                UDP-glucuronosyltransferase; bilirubin UDP-glucuronosyltransferase.
Human adult female liver, CDNA to mRNA, clones 26, 211 and 26MB2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 2351)
Ritter,J.K., Crawford,J.M. and Owens,I.S.
Cloning of two human liver bilirubin UDP-glucuronosyltransferase
                                2024 caataatggtcagtcctcatctctgtcctgcttcataggtgccaccttgtgtgtttaaag 2083
                                                                                                                                                                                                                                                                                                                          2204 gigtaittgagaagataatcattgcitaigtcaaaiggagcigaattigataaaaaccca 2263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2226 GTGTATTTGAGAAGATAATCATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCA 2285
                                                                                                        1904 tgaaacatggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgccctactg 1963
                                                                                                                                                                             1964 caaatggcagttttaatctttttggcttctgcagatggttgcaattgatccttaac 2023
                                                                                                                                                                                                                                                                                      2046 CAATAATGGTCAGTCCTCATCTCTGTCCTGCTTCATAGGTGCCACCTTGTGTTTAAAG 2105
                                                                                                                                                                                                                                                                                                                                                                                                1806 AGTCAGTAAAGATATTTGAATATGTATCGTGCCCCTCCGGTGTCTTTGATCAGGATGAC 1865
                                                                                                                                             1926 TGAAACATGGCCTGTTTGGGAGTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCTACTG 1985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /standard_name="bilirubin UDP-glucuronosyltransferase
isozyme 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human bilirubin UDP-glucuronosyltransferase isozyme I mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /product="UDP-glucuronosyltransferase 1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cDNAs with expression in COS-1 cells
J. Biol. Chem. 266 (2), 1043-1047 (1991)
91093210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_lib="lambda-ZAP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2351 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           'db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /EC_number="2.4.1.17"
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /tissue_type="liver"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /dev_stage="adult
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /isolate="AK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /gene="UGT1"
16. .1617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone="26"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      M57899.1 GI:184472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1. .2351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HUMHUGBR1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     HUMHUGBR1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /ERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                              ΩD
                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                          엄
                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                 à
                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                              ò
```

hypernephroma"

```
INCKRKRDLSOBFBATINASGEHGIVVFSLÖSMVELIPEKKAMATARALGKIPUTU
RYGTRPSNLANNTILVKWLPQNDLLGHPWTRAFITHAGSHGVYESICNGVPMVMMPL
FGDOMUNKRMETKGRGVYLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDRP
VEPLDLAVFWVEFWHKGAPHLFRAAHDLFWYQYHSLDVIGFLLAVVLTVAFITFKC
CAYGYRKCLGKKGRVKKAHKSKTH"
503 c 546 g 691 t
                                                                                                                                                                                                                                                                                                                                                                         SFLTADQTEYRNMIVIGLYFINCQSLLQDRDTLNFFKESKFDALFTDPALPCGVILA
EYLGLPSVYLFRGFPCSLEHTFSRSPDPVSYIPRCYTKFSDHMTFSQRVANFLVNLLE
                                                                                                                                                                                                                                                                                                                /translation="MACLLRSFQRISAGVFFLALWGMVVGDKLLVVPQDGSHWLSMKD
                                                                                                                                                                                                                                                                                                                                              IVEVLSDRGHEIVVVVPEVNLLLKESKYYTRKIYPVPYDQEELKNRYQSFGNNHFAER
                                                                                                                                                                                                                                                                                                                                                                                                                                         PYLFYCLFSKYEELASAVLKRDVDIITLYQKVSVWLLRYDFVLEYPRPVMPNMVFIGG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                47 ttcctctatgtgtgtgttgttgctgctgctgacctgtggctttgccgaggcagggaagctactgg 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  107 tagtgcccatggatgggagccactggttcaccatgaggtcggtggtggagaactcattc 166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         167 tcagggggcatgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  186 ACCGGGGTCATGAGATTGTAGTGGTGGTGCTGAAGTTAATTTGCTTTTGAAAGAATCCA 245
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  227 tgaattgcacagtgaagacttattcaacttcataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            306 ACCAATCATTTGGAAACAATCACTTTGCTGAGCGATCATTCCTAACTGCTCCTCAGACAG 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      347 tgggttcatacaatgaca---tttttgacttatttttttcaaattgcaggagtttgttta 403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       366 AGTACAGGAATAAACATGATATTGCCCTGTACTTCATCAACTGCCAGGCCTCTGC 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               404 aagacaaaaattagtagaatacttaaaggagagttctttgatgcagtgtttctcgatc 463
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         426 AGGACAGGGACACCCTGAACTTCTTTAAGGAGGAGCAAGTTTGATGCTCTTTTCACAGACC 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         524 ccaggggaatactttgccactatcttgaagaaggtgcacagtgccctgctcctttcct 583
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            546 TCAGGGGTTTTCCGTGTTCCCTGGAGCATACATTCAGCAGAAGCCCAGACCCTGTGTCCT 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     584 atgtccccagaattctcttagggttctcagatgccatgactttcaaggagagagtacgga 643
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      606 ACATTCCCAGGTGCTACACAAGTTTTCAGACCACATGACTTTTTCCCAACGAGTGGCCA 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               644 accacatcatgcacttggaggaacatttattatgccaccgttttttcaaaaatgccctag 703
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               666 ACTTCCTTGTTAATTTGTTGGAGCCCTATCTATTTTATTGTCTGTTTTCAAAGTATGAAG 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               70.2%; Score 1629; DB 9; Length 2388;
82.5%; Pred. No. 0;
tive 0; Mismatches 395; Indels 3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         66 TITCTGCAGGGGTTTTCTTCTTAGCACTTTGGGGCATGGTTGTAGGTGACAAGCTGCTGG 125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               126 TGGTCCCTCAGGACGGAAGCCACTGCCTTAGTATGAAGGATATAGTTGAGGTTCTCAGTG 185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            246 AATACTACACAAGAAAATCTATCCAGTGCCGTATGACCAAGAAGAGCTGAAGAACCGTT 305
                                                                                                                                                                                                                 /product="Unknown (protein for MGC:29860)"
/protein_id="AAH19861.1"
/db_xref="GI:18043701"
      /clone-"MGC:29860 IMAGE:4454322"
                                                                                                                             "Vector: pCMV-SPORT6"
                                     /tissue_type="Kidney, h;
/clone_lib="NIH_MGC_89"
/lab_host="DH10B"
                                                                                                                                                                                         /codon_start=1
                                                                                                                                                        1633
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches 1879; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            648 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BASE COUNT
                                                                                                                                                        CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               임
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          linear PRI 22-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Clone distribution: MGC clone distribution information can be found
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             through the I.M.A.G.E. Consortlum/LLNL at: http://image.llnl.gov
Series: IRM Plate: 42 Row: c Column: 8
This clone was selected for full length sequencing because it
passed the following selection criteria: matched mRNA g1: 4507814.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gunaratne, P.H., Garcia, A.M., Lu, X., Hulyk, S.W., Hale, S.M.,
Yoon, V.S., Kowis, C.R., Lawrence, S., Martin, R.G., Muzny, D.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Euxaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC019861 22-JAN-20
Homo sapiens, clone MGC:29860 IMAGE:4454322, mRNA, complete cds.
BC019861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Submitted (19-DEC-2001) National Institutes of Health, Mammalian
                                                      Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2599,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1901 GGCA'ITCTAGATTACTTTTCTTACTCTGAAACATGGCCTGTTTGGGAGTGCGGGATTCAA 1960
                                                                                                                                                                                                                 2058 atagytyccaccttytytytttaaagaaggaagctttytacctttagaytytagay 2117
                                                                                                                                                                                                                                                                                                                                                                  2081 ATAGGIGCCACCTIGIGIGITIAAAGAAGGGAAGCITIGIACCTITAGAGTGIAGGIGAA 2140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2141 ATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGATTTCTTGTTTTTGGGGAAAAA 2200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2238 atggagctgaatttgataaaaacccaaaatacagctatgaagtgctgggcaagtttactt 2297
                                                                                                                                                                                   1998 gcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgtcctgcttc 2057
                                                                                                                                                                                                                                                                                                                                                                                                                                  2118 atgantgaatggcttggagtgcactgagaacagcatatgatttcttgctttggggaaaaa 2177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2178 gaatgatgctatgaaattggtggtggtggtgtttgagaagataatcattgcttatgtcaa 2237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A Library Preparation: Life Technologies, Inc.
A Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
Sequencing by: Baylor College of Medicine Human Genome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ter code: BCM-HGSC
site: http://www.hgsc.bcm.tmc.edu/cdna/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Richards, S., Gibbs, R.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Contact: amg@bcm.tmc.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BC019861.1 GI:18043700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 2388)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequencing Center
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
```

naman.

ORGANISM

KEYWORDS

REFERENCE

JOURNAL

REMARK

COMMENT

DEFINITION ACCESSION VERSION

RESULT 1 BC019861

ð

g

ö

셤 õ

ð

704 aaatagcctctgaaattctccaaacacctgttacggagtatgatctctacagccacat 763

source

FEATURES

```
LAKYLSIPAVFFWRYIPCDLDFRGTQCPNPSSYIPKLLTRNSDHWTFLQRVKNMLYPL
ALSYICHTRSAPYASIASELEQREYSVPUDLYSYASWWLFRGDFWDYFPINWYFI
GGINCANGNFDLGOFFEAINASGEHGIVYFSLGSWYSEIPEKKAMLADALGKTPOTY
LWRYTGTRPSNLANNTILVKWLPONDLLGHPWTRAFITHAGSHGVYESICNGVPMVM
                                                                                                                                                                  PLFGDQMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKD
RPVEPLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /product="UDP-glucuronosyltransferase 2 family polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101 CTGGCCTGAGAGGTGTGGTGGTGGTGCCCACTGATGGCAGCCCCTGGCTCAGCAT 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           141 gaggtcggtggtggagaaactcattctcagggggcatgaggtggtggtgtagtcatgccaga 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    161 GCGGGAGGCCTTGCGGGAGCTCCATGCCAGAGGCCACCAGGCGGTGGTCCTCACCCCAGA 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          201 ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              221 GGTGAATATGCACATCAAAGAAGAAATTTTTCACCCTGACAGCCTATGCTGTTCCATG 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                261 taccotggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagc 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             281 GACCCAGAAGGAATTTGATCGCGTTACGCTGGGCTACACTCAAGGGTTCTTTGAAACAGA 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      318 acaagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       341 ACATCTTCTGAAGAGATATTCTAGAAGTATGGCAATTATGAACAATGTATCTTTGGCCCT 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                378 tttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagag 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             401 TCATAGGTGTTGTGTGGAGCTACTGCATAATGAGGCCCTGATCAGGCACCTGAATGCTAC 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          438 ttottttgatgcagtgtttotogatocttttgataactgtggcttaattgttgccaaata 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   498 tttctccctccctccgtggtcttcgccaggggaatactttgccactatcttgaagaagg 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   558 tgcacagtgccctgctcctctttcctatgtccccagaattctcttagggttctcagatgc 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            581 CACACAGTGTCCAAATCCTTCCTCTATATTCCTAAGTTACTAACGACCAATTCAGACCA 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         618 catgactttcaaggagagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      641 CATGACATTCCTGCAAAGGGTCAAGAACATGCTCTACCCTCTGGCCCCTGTCCTACATTTG 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               678 ccaccgtttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                701 CCATACTTTTTCTGCCCCTTATGCAAGTCTTGCCTCTGAGCTTTTTCAGAGAGGGGTGTC 760
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ggagtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttgga 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      761 AGTGGTGGATCTTGTCAGCTATGCATCCGTGTGGCTGTTCCGAGGGGACTTTGTGTGATGGA 820
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   798 ctateceaaacccgtgatgeccaacatgatetteattggtggtateaactgecateaggg 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   70.5%; Score 1636.6; DB 9; Length 2368; 83.4%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches 369; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             657 t
                                                                                                                                                                                                                                           KCCAYGYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                        /gene="UGT2B"
/EC_number="2.4.1.17"
/note="G00-127-753"
                                                                                                                                                                                                                                                                                                                                                               /note="G00-127-753"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        573 g
                                                                                                                                                                                                                                                                                                                             /gene="UGT2B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             534 c
                                                                                                                                                                                                                                                                                                                                                                                                     .1631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 1871; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Similarity
                                                                                                                                                                                                                                                                                      sig_peptide
                                                                                                                                                                                                                                                                                                                                                                                                          mat_peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
```

셤

8 ö g

ò

g

ŏ g

ò

δ g οq

ò

g

ò

g

δy

g

ò

ρp

ò

ò

```
978 tgatgctttgggcaaaatccctcagacagtcctgtggcggtacactggaacccgaccatc 1037
                                                                                                                                                                                                                                                                                                                                           1001 TGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGCGGTACACTGGAACCCGACCATC 1060
                                                                                                                                                                                                                                                                                                                                                                                               1038 gaatottigogaacaacaacgatactigitaagiggotaococaaaacgaictigotiggica 1097
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1061 GAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAAAACGATCTGCTTGGTCA 1120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1098 cccgatgacccgtgcctttatcacccatgctggttcccatggtgttttatgaaagcatatg 1157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1121 CCCGATGACCCGTGCCTTTATCACCCATGCTGGTTCCCATGGTGTTATGAAAGCATATG 1180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1158 caatggcgttcccatggtgatgatgcccttgtttggtgatcagatggacaatgcaaagcg 1217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1181 CAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAGATGGACAATGCAAAGCG 1240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1218 catggagactaagggagctggagtgaccctgaatgttctggaaatgacttctgaagattt 1277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1278 agaaaatgetetaaaageagteateaatgacaaagattacaaggagaacateatgegeet 1337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1301 AGAAAATGCTCTAAAAGCAGTCATCAATGACAAAAGTTACAAGGAGAAACATCATGCGCCT 1360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1338 ctccagccttcacaaggaccgcccggtggagccgctggacctggccgtgttctgggtgga 1397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1361 CTCCAGCCTTCACAAGGACCGCCCGGTGGAGCCGCTGGACCTGGCCGTGTTCTGGGTGGA 1420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1398 gtttgtgatgaggcacaaagggcgcgccacacctgcgccccgcagcccacgacctcacctg 1457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1421 GTTTGTGATGAGGCACAAGGGCGCGCCACACCTGCGCCCCGCAGCCCCACGACCTCACCTG 1480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1458 gtaccagtaccattccttggacgtgattggtttcctctttggccgtcgtgctgacagtggc 1517
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1481 GTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCGTGCTGACAGTGGC 1540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1518 cttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaaaaagggcg 1577
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1638 tttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgttaaattcatttt 1697
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1661 TTTGAACCATTCCCTAGTCATTTCCAAACTTGAAAACAGAATCAGTGTTAAATTCATTTT 1720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1698 attettattaaggaaataetttgeataaattaateageeeegggtgetttaaaaaatte 1757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1721 ATTCTTATTAAGGAAATACTTTGCATAAATTAATCAGCCCCAGAGTGCTTTAAAAAATTC 1780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1758 tottaaataaaaataatagaotogotagtoagtaaagatatttgaatatgtatogtgooo 1817
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1781 TCTTAAATAAAATAATAGACTCGCTAGTCAGTAAAGATATTTGAATATGTATCGTGCCC 1840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1818 octocogitytettigateaggaigaeatgigeeattitteagaggaegigeagaeagget 1877
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1841 CCTCCGGTGTCTTTGATCAGGATGACATGTGCCATTTTTCAGAGGACGTGCAGACAGGCT 1900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ggcattctagattactttcttactctgaaacatggcctgtttgggagtgcgggattcaa 1937
                                                                                                      821 CTACCCCAGGCCGATCATGCCCAACATGGTCTTCATTGGGGGCCATCAACTGTGCCAACGG 880
                                                                                858 aaagccgttgcctatggaatttgaagcctacattaatgcttctggagaacatggaattgt 917
                                                                                                                                                                                      918 ggttttctctttgggatcaatggtctcagaaattccagagaagaagaagctatggcaattgc 977
g
                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                å
                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

à a	846	ctgccatcaggaaagccgttgcctatggaatttgaagcctacattaatgcttctggaga 905 	
S G	906	tcttttgggatcaatggtctcagaaattccagagaagaagc 96;	
oy Ob	966	tgotgatgatttgggcaaatcctcagacagtcctgtggcggtacactgg 10; 	
Qy Dp	1026	gatacttgttaagtggctaccccaaacga 10 	
oy Dp	1086 721	atggtgttta 11. \TGGTGTTTA 78	
oy Ob	1146 781	gccttgtttggtgatcagatgga 12 	
oy Dp	1206	caatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctggaaatgac 1265 	
λά Q	1266	ttotgaagatttagaaaatgototaaaagoagtoatoaatgacaaagttacaaggagaa 1325 	
ž g	1326 961	catcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctggccgt 1385 	
දු සු	1386 1021	gttctgggtggagtttgtgatgaggcacaagggcgccacactgcgcccgcagccc 1445 	
ž a	1446	cgacctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcgt 1505 	
ž g	1506	gctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggg 1565 	
ž q	1566	gaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggtgg	
λ d	1626 1261	ataaggtaaaattttgaaccattcctagtcatttccaaacttgaaaacagaatcagtgt 1685 	
γ	1686 1321	taaattoattitattottattaaggaaatacttigoataaattaatoagooocagagtgo 1745 	
<u>ک</u> و	1746 1381	tttaaaaaatttottaaataaaaataatagactogotagtoagtaaagatattgaata 1805 	
λ d	1806	tgtatogtgcccctccggtgtctttgatcaggatgacatgtgccattttcagaggacg 1865 	
λ Q	1866	0 0	
λ.	1926	ggcagttttaatcttat 198	

```
HUMHUGBRZ 2368 bp mRNA linear PRI 07-MAR-1995
Human bilirubin UDP-glucuronosyltransferase isozyme 2 mRNA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="CDB:600-127-753"
/translation="Margicovplpriationscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscriptonscr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /codon_start=1
/product="UDP-glucuronosyltransferase 2 family polypeptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 UDP-glucuronosyltransferase; bilirubin UDP-glucuronosyltransferase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 (bases 1 to 2369).
Ritter, J.K., Crawford, J.M. and Owens, I.S.
Cloning of two human liver billrubin UDP-glucuronosyltransferase cDNAs with expression in COS-1 cells
J. Biol., Chem. 266 (2), 1043-1047 (1991)
                                                                                                        Human adult female liver, cDNA to mRNA, clones 217 and 217P5E2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /standard_name="bilirubin UDP-glucuronosyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /protein_id="AAA63196.1"
/db_xref="GI:184475"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_lib="lambda-ZAP"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  number="2.4.1.17"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="liver"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
1. .2368
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /map="Unassigned"
/clone="217"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /sex="female"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /gene="UGT2B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /isolate="AK"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /qene="UGT2B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         M57951.1 GI:184474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          isozyme 2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo suplens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HUMHUGBR2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
```

```
Watanabe,K., Kumagai,A., Itakura,S., Yamazaki,M., Tashiro,H., Ota,T., Suzuki,Y., Obayashi,M., Nishi,T., Shibahara,T., Tanaka,T., Nakamura,Y. Isogai,T. and Sugano,S. WEDO human CDNA sequencing project Unpublished (2000)
                                                                                                                                                                                                                                        Submitted (29-AUG-2000) to the DDBJ/EMBL/GenBank databases. Sumio
                                                                                                                                                                                                                                                                                                                                                                                          International Trade and Industry of Japan; cDNA full insert sequencing: Research Association for Biotechnology; cDNA library construction, 5'-& 3'-end one pass sequencing: Departent of Virology and Human Genome Center, Institute of Medical Science, University of Tokyo (partly supported by Science and Technology
                                                                                                                                                                 ., Ota, T., Obayashi, M., Nishi, T., Isogai, T.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     486 tgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgccacta 545
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         121 TGTTGCTAAATATTTTCTCCCTCCTCTGTGGTCTTCACCAGGGGAATATTTTGCCACCA 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          546 tettgaagaaggigeacagigeectgeteettieetaigteeccagaaitetetiagg 605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              181 TCTTGAAGAAGGTGCACAGTGCCCTGCTCTTTCCTATGTCCCCAATGATCTTTAGG 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                606 gttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagga 665
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 GIICICAGAIGCCAIGACITICAAGGAGAGAGIAIGGAACCACAICGIGCACIIGGAGGA 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  666 acatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcca 725
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      301 CCATITATITIGCCAGIATCTITIAGAAATGCCCTAGAAATAGCCTCTGAAATTCTCCA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     726 aacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgga 785
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   361 AACCCCTGTCACGGCATATGATCTCTACAGTCACATCAATTTGGTTGTTGCGAACGGA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  366 tittgacitatititticaaatigcaggagitigittaaaagacaaaaaatiagiagaata 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     426 cttaaaggagagttettttgatgeagtgtttetegateettttgataaetgtggettaat 485
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    61 CTTAAAGGAGAGTTCTTTTGATGCAGTGTTTCTGGATCCTTTTGATACCTGTGGCTTAAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sugano, Institute of Médical Science, University of Tokyo,
Laboratory of Genome Structure Analysis, Human Genome Center;
Shirokane-dai, 4-6-1, Minato-ku, Tokyo 108-8639, Japan
(E-mail:cdnai@ims.u-tokyo.ac.jp, Tel:81-3-5449-5286,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match 81.7%; Score 1895.8; DB 9; Length 2003; Best Local Similarity 98.1%; Pred. No. 0; Matches 1918; Conservative 0; Mismatches 37; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1. .2003
/note="highly similar to AF056188 Homo saplens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          UDP-glucuronosyltransferase 1A9 (UGT1A9) mRNA"
414 c 445 q 593 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="colon mucosa"
/note="cloning vector pME18SFL3"
                                                                                                                                                                                       Shibahara, T., Tanaka, T. and Nakamura, Y.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     445 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /clone="COLF5999"
/clone_lib="COLF"
                                                                                                                                      (bases 1 to 2003)
                                                                                                                                                                    Sugano, S., Suzuki, Y
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    . 2003
                                                                                                                                                                                                                  Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Agency)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 misc_feature
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BASE COUNT
ORIGIN
                                                                                                                                                                                                                  TITLE
JOURNAL
                AUTHORS
                                                                                                                   JOURNAL
                                                                                                                                        REFERENCE
                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FEATURES
                                                                                             TITLE
                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRI 29-SEP-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens cDNA: FLJ21750 fis, clone COLF5999, highly similar to AF056188 Homo sapiens UDP-glucuronosyltransferase 1A9 (UGT1A9)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1982 ttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctc 2041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2101 tttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2221 atcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagt 2280
                                                                    1603 TCGGGAAAAAAGGGCGAGTTAAGAAAGCCCACAAATCCAAGACCCATTGAGAAGTTGGTG 1662
                                                                                                                                                                                                                                                                    1682 gigitaaaiticaititiaticitaitaaggaaatacitigcaiaaaitaaicagococaga 1741
                                                                                                                                                                                                                                                                                                                                                                               1780 GTGCTTTAAAAAATTATCTTAAATAAAATAATAGAATCACTAGTCAGTAAAGATATTG 1839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1862 gacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttg 1921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1899 GATGTGCAGACAGGCTGGCGTTCTACATGCCTTTTCTTACTCGGAAACATGACCTGTTTG 1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1922 ggagtgcgggattcaaaggtggtcccaccgctgccctactgcaaatggcagttttaatc 1981
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1959 GGAGTGCAGGATTCAAAGGTGGTCCCACCGCTGTCCCTATTGCAAATGGCAGTTTTAATC 2018
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2042 atctctgtcc-tgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacc 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2139 TTTAGAGCATAGGTGAAATGAGTGAATGGCTTGGAGTGCACTGAGAACAGCATACGATCT 2198
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2199 ATTGCTTTGAGGAAAAGAATGATGCTGTAAAATTGATGGGTGGTGTGTTTGAGAAAGATA 2258
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2259 ATCATIGCTIAIGICAAAIGGAGCIGAAITICAIAAAAACCCAAAAIACAGIGAIGAAGI 2318
                                         1502 tegtgetgacagtggeettcateacetttaaatgttgtgettatggetaceggaaatget 1561
                                                                                                                                           1562 tggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggtg 1621
                                                                                                                                                                                                                                                 1622 ggaaataaggtaaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatca 1681
                                                                                                                                                                                                                                                                                                                                                                                                                                                   1742 gigoittaaaaaaattoittaaataaaaaataatagaciogotagioagtaaagatatiig 1801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1802 aatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccattttcagag 1861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1840 AATATGTATGATG-CCCCTCCGGTGTCTTCGATCAAGATGACACATGCCATCTTTCAGAG 1898
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AK025403.1 GT:10437911
Holdo capping; fis (full insert sequence).
Holdo capping colon mucosa cDNA to mRNA, clone_11b:COlF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2319 GCTGGGCAAGCGTA-TTTTTTTTTTTTTTCTTACTTTCCTGCAACT 2357
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2003 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    clone: COLF5999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AK025403.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AK025403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AK025403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AK025403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                              ŏ
                                                                                                                                           ò
                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                               셤
```

ö

```
g
                                                                                                       ó
                                                                                                                                                                       ò
                                                                                                                                                                                                       g
                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                     유
                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                     염
                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /traislation="wirdowsplplcyclilacgpaeagkilyvpydgshwiswrsy
Vekilirghevywpryswolgrplactyrtystsytledidrefrafragowargy
Osifslingsyndiplefsoncriektorkkuevertrespoyeldpydidyry
islesywpargychylefsocopadisyvpriligfsdamyrkeryrninhieeri
LCHRFFKSALEIASEILOTPYTYDLHRQISIWILRMDFYLDYRFYWRNNYPTGGIN
CHOGREPHWEREAYINASGEHGIYVEGLGSWARIPERKAMAIADACKIPOTYLMRY
TGTPPSNLANNTILVWEWDONDLIGHPWTARITHAGSHGIYCHOVPWWAMPLEG
DQMDNAKRMFYGRACYLANLEMYSBDLENLKAYINHESIRKDRYP
PLDLAYFWYEFVWRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAIVLYVAFIAFKCCA
                                                                                                                                                                                                                                                                                          Submitted (05-NOV-1998) Molecular Endocrinology, Laval University, 2705 Laurier Boulevard, Sainte-Foy, Que G1V4G2, Canada
                                                              Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                         Albert, C., Vallee, M., Beaudry, G., Belanger, A. and Hum, D.W. The monkey and human uridine diphosphate-glucuronosyltransferase UGT1A9, expressed in steroid target tissues, are
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    122 ggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgagg 181
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      163 GGAGCCACTGGCTCTCCATGAGGTCGGTGGAGAAACTCATTCTCAGGGGGCATGAGG 222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         302 atgotoaatgguaagcacaagtacgaagtatatattototattaatgggttoatacaatg 361
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    343 AGGCTCAATGGAAAGCACAAGTACAAAGTATATTTTCTCTAATAATGAGTTCCTACAATG 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       62 gtctyctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggatg 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        182 tggtigtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtga 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Albert, C., Vallee, M., Beaudry, G., Belanger, A. and Hum, D.W. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                            /product="UDP-glucuronosyltransferase UGT1A09"
/protein_id="AAF15546.1"
/db_xref="GI:6537138"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             89.5%; Score 2076; DB 9; Length 2396; 94.6%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. 0;
0; Mismatches 120; Indels
                                                                                                                                                                                                                                                                                                                                                            /organism="Macaca fascicularis"
                                                                                                                                                                                estrogen-conjugating enzymes
Endocrinology 140 (7), 3292-3302 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              680 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                'GYRKCFGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                            /db_xref="taxon:9541"
                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             558 g
                                                                                              Cercopithecinae; Macaca.
1 (bases 1 to 2396)
                                                                                                                                                                                                                                                                                                                                                                                                              /codon_start=1
AF104336.1 GI:6537137
                                                                                                                                                                                                                                                (bases 1 to 2396)
                            crab-eating macaque.
                                                Macaca fascicularis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             513 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 2194: Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           645 a
                                                                                                                                                                                                                                10385426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                source
                                              ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN
                                                                                                                            AUTHORS
TITLE
                                                                                                                                                                                          JOURNAL
MEDLINE
                                                                                                                                                                                                                                            REFERENCE
AUTHORS
                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                            JOURNAL
          KEYWORDS
                                                                                                                                                                                                                              PUBMED
                                                                                                                                                                                                                                                                                                                                                                                              CDS
                                                                                                                                                                                                                                                                                                                              FEATURES
VERSION
                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
```

```
962 aagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtaca 1021
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1003 AAGCTATGGCAATTGCTGATGCTTTGGCCAAAATCCCTCAGACAGTCCTGTGGCGGTACA 1062
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1022 ctggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaa 1081
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1063 CTGGAACCCCACCATCGAATCTTGCGAACAATACGATACTTGTTAAGTGGCTACCCCAAA 1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1082 acgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtg 1141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1123 ACGATCTTCTTGGTCACCCAAGGACCCGTGCCTTATCACCCATGCTGGTTCCCATGGTA 1182
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1202 tggacaatgsaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaa 1261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1262 tgacttctg.aagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaagg 1321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1382 ccqtgttctgggtggagtttgtgatgaggcacaagggcgccacacctgcgcccgcag 1441
                                                                                                                                                                                                                                                                                                                                                                                                                            1243 IGGACAAIGCAAAGCGCAIGGAGACIAAGGGAGCIGGAGIGACCCIGAAIGTICTIGAAA 1302
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1322 agaacatca-gegeetetecageetteacaaggacegeeeggtggageegetggacetgg 1381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1423 CCGTGTTCTGGGTGGAGTTTGTGATGAGGCACAAGGGCGCACCACACCTGCGCCCCGCAG 1482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1483 CCCACGACC:CACCTGGTACCATTCCTTGGACGTGATCGTTCCTTGGACGTTTCCTTGGCTTTCTTGGATTCCTTGGATTCCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTCTTGGATTGTTGGATTCTTGGATTGGATTGTTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGATGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGATTGGA
403 ACATITITGACITATITITICAAAITGCAGGAGITITGTITAAGGACAAAAAGITAGTAG 462
                                                                                                                                                                                                                                                                                                                                                           482 taattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgcc 541
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1442 cccacgaccicacctggtaccagtaccattccttggacgtgattggttcctcttggccg 1501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             542 actatcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctct 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              662 aggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattc 721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    703 AGGAACGIITAITAIGCCACCGITITITCAAAAGIGCCCTAGAAAIAGCCICTGAAAIIC 762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         722 tecaaacacetgttaeggagtatgatetetaeagecaeacateaatttggttgttgegaa 781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               763 TICAAACACCIGICACAGIAIAIGAICIICACAGACAAAIAICAAIIIGGIIGCIGCGAA 822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     782 cggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggta 841
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    823 TGGACTITGITITGGACTATCCCAAACCCGTGATGCCCCAACATGGTCTTCATTGGTGGTA 882
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          842 tcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctg 901
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                883 TCAACTGCCATCAGGGAAAGCCATTGCCTATGGAATTTGAAGCCTACATTAATGCTTCTG 942
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      902 gagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaaga 961
```

														*				
323	367	427	487 503	547	607	667	727	787	847	907	967	1027	1087	1147	1207	1267	1327	1387
	aatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatgacattt 	ttgacttatttttttcaaattgcaggagtttgtttaaagacaaaaattagtagaatact 	taaaggagattttttgatgcagtgttttttgatctttgataactgtggttaattg 	tigocaaatattotocotocotoogtggtottogocaggggaatactttgocactato 	tigaagaaggtgcacagtgctcctcttcctatgtccccagaattctcttagggt 	1 tctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggaggaac 	a atttattatgocacogtttttcaaaaatgocotagaaatagoctotgaaattotocaaa 	cacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacggact 	tigititigactatcccaaacccgtgatgcccaacatgatcttcattggtgtatcaact 	g gocatoagggaaagcogttgoctatggaatttgaagcotacattaatgcttctggagaac 	a atggaattgtggttttctctttgggatcaatggtctcagaaattccagagaagaagcta 	tggcaattgctgatgctttgggcaaaatccctcagacagtcctgtgggggtacactggaa 	cccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacgatc 	Horttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgtttatg 	B aaagcatatgcaatggcgttcccatggtaatgatgcccttgtttggtgatcagatggcaca 	B atgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatgactt 	Ctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaagttacaaggagaca 	8 tcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctggccgtgt
265	308	368	428	488	548	608	668 684	728	788	848	908	968 984	1028	1088	1148	1208	1268	1328
QD	Qy Dp	oy B	Qy Dp	Oy Dp	Oy Dp	Qy Db	Oy Dp	O.Y	Qy Dp	O.Y	g ç	දු පු	g ç	Oy Dp	g ç	Oy Dp	QY	ΟY

Macaca fascicularis UDP-glucuronosyltransferase UGTIA09 mRNA, complete cds.
AF104336 2226 tgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctgg 2285 2046 ctgtcctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacctttag 2105 2106 agtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttcttgc 2165 2166 tttggggaaaaagaatgatgctatgaaattggtgggtggtgttattgagaagataatcat 2225 1688 aattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtg-ct 1746 1986 ctittggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatct 2045 2122 AGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGATTTCTTGC 2181 2242 TGCTTATGTCAAATGGAGGTTAATTTGATAAAACCCAAAATACAGCTATGAAGTGCTGG 2301 1344 TCATGCGCCTCTCCAGCCTTCACAAGGACCGCCCGGTGGAGCCGCTGGACCTGGCCGTGT 1403 1448 accteacetggtaccagtaccattecttggacgtgattggtttectettggeegtegtge 1507 1628 aaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgtta 1687 1747 ttaaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttgaatat 1806 1763 TTAAAAAATTCTCTTAAATAAAAATAATAGACTCGCTAGTCAGTAAAGATATTTGAATAT 1822 1807 gtatogtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggacgt 1866 1464 ACCICACCIGGIACCAGIACCATICCIIGGACGIGAITGGIIICCICIIGGCCGCCGCGTGC 1523 1508 tgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgggga 1567 2302 GCAAGITIACITITITICIGAIGITICCTACAAAI 2337 DEFINITION RESULT 8 AF104336 οg g δ 셤 οχ g δy a δ g δ g ò 셤 g ŏ οχ q δ a δ q οy g ολ òγ a Š q Qγ g

ACCESSION

```
1256 ACAATGCAAAGCGCATGGAGTAAGGGAGCTGGAGTGACCCTGAATGTTCTGGAAATGA 1315
                                                                                                                                                                                             1376 ACATCATGCGCCTCTCCAGCCTTCACAAGGACCGCCGGTGGAGCCGCTGGAGCCGCGG 1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1984 atcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcat 2043
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1265 cttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggaga 1324
                                                                                                                                     1316 CITCIGAAGAITIAGAAAAIGCICIAAAAGCAGICAICAAIGACAAAAGIIACAAGGAGA 1375
                                                                                                                                                                                                                                           1385 tyttctgggtggagtttgtgatgaggacacaaggggcgccacacctgcgcccgcagcc 1444
                                                                                                                                                                                                                                                                             1496 ACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCG 1555
                                                                                                                                                                                                                                                                                                                                                                                                      1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagcccagagtg 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1804 tatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccattttcagagga 1863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1976 AGTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCTACTGCAATGGCAGTTTTAATCTT 2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2276 ATTGCTTATGTCAAATGGAGCTGAATTGATAAAAACCCAAAATACAGCTATGAGTGTT 2335
1196 ATGAAAGCATATGCAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAGATGG 1255
                                  1205 acaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctggaaatga 1264
                                                                                                                                                                          1325 acatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctggccg 1384
                                                                                                                                                                                                                                                                                                                 1445 acgaecteaectggtaceagtaceatteettggaegtgattggttteetettggeegteg 1504
                                                                                                                                                                                                                                                                                                                                                                                      1505 tgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1625 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1736 TIAAATICATITITATICITATTAAGGAAATACITIGCATAAATTAAICAGCCCCAGAGIG 1795
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1745 cttt-aaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttgaa 1803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1856 TATGTATCGTGCCCCCTCCGGTGTCTTTGATCAGGATGACATGTGCCCATTTTTCAGAGGA 1915
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1864 cgtgcagacaggctggcattctagattactttcttactctgaaacatggcctgtttggg 1923
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1924 agiggggattcaaaggiggtcccaccgctgccctactgcaaatggcagttttaatctt 1983
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2036 AICTITTGGCTTCTGCAGATGGTTGCAATTGATCCTTAACCAATAATGGTCAGTCCTCAT 2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2044 ctctgtcctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtaccttt 2103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2104 agagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttctt 2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2224 attgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgct 2283
                                ò
                                                                 g
                                                                                                     ò
                                                                                                                                셤
                                                                                                                                                                        ò
                                                                                                                                                                                                   8
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
```

```
4394 pp mRNA linear PRI 04-MAY-2000 Homo sapiens UDP-glucuronosyltransferase mRNA, complete cds. 555985
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RSIYSLLMGSYNDIFDLFFSNCRSLFKDKKLVEYLKESSFDAVFLDPFDNCGLIVAKY
FSLPSVVFARGILCHYLEEGAQCPAPLSYVPRILLGFSDDMTFKERVRNHIMHLEEHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LCHRFFKNALEIASEILQTPVTEYDLYSHTSIMLLRTDFVLDYPKPVMPNMIFIGGIN
CHERKALPMEFEAYINASGEHGIVGFSLGSMVSEIPEKKAMAIADALGKIPQTVLMRY
TGTRPCNLANNTILVKMLPQNDLLGHPMTSAFITHAGSHGYYESICNGVPMVMMPLFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DQMDNAKRMETKCAGVTMNVLEMTSEELENALKAVINDKSYKENIMRLSSLHKDRPVE
PLDLAVFWVEFVWRHKGATHLRPAAHDLTWYQYHSLDVIGFLLAAVLTVAFITCKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /translation="MACTGWTSPLPLCVCLLLTCGFAEAGKLVVVPMDGSHWFTMRSV
VEKLILEGHEVVVVSARGELATGKINEHSEDLFNETYLLEDLOREFRAFARAMANAV
                                                                                                                                                                                                                                                                                                                                                                                                                   Wooster, R., Sutherland, L., Ebner, T., Clarke, D., Da Cruz e Silva, O. and Burchell, B.
                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cloning and stable expression of a new member of the human liver
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              presented here differs from translation in publication"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="phenol/bilirubin; lugP4; conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Genbank staff at the National Library of Medicine created this entry [NCBI gibbsq 55985] from the original journal article. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               129 ctggttcaccatgaggtcggtggtggagaactcattctcagggggcatgaggtggttgt 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                145 CTGGTTCACCATGAGGTCGGTGGTGGAAACTCATTCTCAGGGGGCATGAGGTGGTTGT 204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    189 agtca-tgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  205 AGTCAGTGCCAGAGGTGAGTTGGCAACTGGGAAGATCAATGAATTGCACAGTGAAGACTT 264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248 attcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcccatgctc 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches 47; Indels 7; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9 cagiticitigatigatigacagaggitgaccagccccticctctatigigitgitetigit 68
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     phenol/bilirubin: UDP-glucuronosyltransferase cDNA family Biochem. J. 278 (Pt 2), 465-469 (1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93.0%; Score 2156.8; DB 9; Length 2392; 97.7%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="UDP-glucuronosyltransferase"
/protein_id="AAB19791.2"
685 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YGYRKCLGKKGRVKKAHKSKTH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /db_xref="GI:7690346"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /tissue_type="liver"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   554 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /codon_start-1
                                                                                                                                                                                                                                                                                                                                                                                                   (bases 1 to 2392)
                                                                                                                                                                                                                                               S55985.1 GI:235453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         492 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches 2262; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .2392
                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            661 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         91378855
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           source
                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                            ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
ORIGIN .
                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOURNAL
                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                  VERSION
  ò
                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
1025 gaaccogaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1145 atgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcagatgg 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           956 AACATGGAATTGTGGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAGAAGAAG 1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            965 ctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggggggtacactg 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1016 CTATGGCAATTGCTGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGCGGTACACTG 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1076 GAACCCGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAAAACG 1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1085 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1136 ATCTGCTTGGTCACCCGATGACCCGTGCCTTTATCACCCCATGCTGGTTCCCATGGTGTTT 1195
                                                                                                                                                                                                                                                                                                                                                                                                                                          425 acttaaaggagagttettttgatgeagtgtttetegatecttttgataaetgtggettaa 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      176 GTCACTGGTTCACCATGCAGTCGGTGGTGAAAACTTATCCTCAGGGGGCATGAGGTGG 235
                                                                                                                                                                                             185 ttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaaga 244
                                                                                                                                                                                                                                                  236 TTGTAGTCATGCCAGAGGTGAGTTGGCAACTGGAAAGATCACTGAATTGCACAGTGAAGA 295
                                                                                                                                                                                                                                                                                                       245 cttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcccatg 304
                                                                                                                                                                                                                                                                                                                                                        296 CTTACTCAACCTCGTACACTCTGGAAGATCAGAACCGGGAATTCATGGTTTTCGCCCATG 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         365 tttttgacttattttttcaaattgcaggagtttgtttaaagacaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              416 TICTIGACITATITITICGCATIGCAGGAGTITGTITAAIGACCGAAAATTAGTAGAAT 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       476 ACTIANANGGAGAGTICTTTTGATGCAGTGTTTCTGGATCCTTTTGATACCTGTGGCTTAA 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              485 ttgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgccact 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    665 aacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            776 AAACCCCTGTCACGGCATATGATCTCTACAGTCACACATCAATTTGGTTGTTGCGAACGG 835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    785 actttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggtatca 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          845 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 896 ACTGTCATCAGGGAAAGCCATTGCCTATGGAATTTGAAGCCTACATTAATGCTTCTGGAG 955
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   905 aacatggaattgtggttttctctttgggatcaatggtctcagaaattccagaagaaag 964
                                                                                    gccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgaggtgg 184
                                                                                                                                                                                                                                                                                                                                                                                                                305 ctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatgaca 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     545 atcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctcttag 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             725 aaacacetgttacggagtatgatetetacagecacacatcaatttggttgttgcgaacgg 784
  g
                                                                                                                                                                                           δ
                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                    δλ
                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       О
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ά
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LINL at: http://image.llnl.gov Scries: IRAK plate: 20 Row: m Column: 8 This clone was selected for full length sequencing because it passed the following selection criteria: GenomeScan gene prediction, Similarity but not identity to protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Stanford University School of Medicine, Stanford, CA 94305
b: http://www-shgc.stanford.edu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /translation="MaragwTSPVPLCVCLLLTCGFAEAGKLLVVPMDGSHWFTMQSV
VEKLILRGHEVVVVWPEVSWQLERSLNCTVKTYSTSYTLEDQNREFMVFAHAQWKAQA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FCQYLFRNALEIASEILQTPVTAYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHOCKPLPMEFEATINASCEHGIYVFSLGSMYSEIPEKKAMAIADALGKIPOTVUMRY
TGTRPSNLANNTILVKWLPONDLLGHPMTRAFITHAGSHCYYESICNCYPMYMMPLFG
DQMDNAKRMETKGAGYTLNVLEWTSEDLENALKAYINDKSYKENIMRLSSLHKDRPYE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 QSIFSLIMSSSSGFLDLFFSHCRSLFNDRKLVEYLKESSFDAVFLDPFDTCGLIVAKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FSLPSVVFTRGIFCHHLEEGAQCPAPLSYVPNDLLGFSDAMTFKERVWNHIVHLEDHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
Homo sapiens, Similar to UDP glycosyltransferase 1 family, Polypeptide A9, clone MGC:9353 IMAGE:3850654, mRNA, complete cds.
                                                                                                                                                                                        Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: (Dickson, Mark) mcd@paxil.stanford.edu
Dickson, M., Schmutz, J., Grlmwood, J., Rodriquez, A., and Myers,
                                                                                                                                                                                                                                                                                                 Direct Submission
Submitted (03-JAN-2002) National Institutes of Health, Mammallan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Sequencing Group at the Stanford Human Genome
                                                                                                                                                                                                                                                                                                                                                        Gene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2599,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /product="Similar to UDP glycosyltransferase 1 family,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69; Indels 1; Gaps
                                                                                                                                                                                                               Manmalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 2423)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Ouery Match 94.6%; Score 2194.6; DB 9; Length 2423; Best Local Similarity 97.0%; Pred. No. 0; Marches 2247; Conservative 0; Mismatches 69; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /clone="MGC:9353 IMAGE:3850654"
/tissue_type="Colon, adenocarcinoma"
/clone_lib="NIH_MGC_65"
                                                                                                                                                                                                                                                                                                                                                                                                                                    NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       707 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note="Vector: pCMV-SPORT6"
70. .1662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        _id="AAH20971.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /protein_id="AAH20971.1
/db xref="GI:18088087"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /GYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Email: cgapbs-r@mail.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       559 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /lab_host="DH10B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polypeptide A9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tissue Procurement: ATCC
                                                                           BC020971.1 GI:18088086
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       514 c
                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Web site:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    643 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        source
DEFINITION
                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                    ACCESSION
                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                            KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                       REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

289			424	484 529	544 589	604 649	664 709	724	784 829	844 889	904		1024 1069	108 4 1129	1144	1204 1249	1264	1324 1369
AAAATCACTGAATTGCACAGTGAAGA	cgggagttcaaggctttgccatg 	ctattaatgggttcatacaatgaca CTATTCTGAGTTCATCCAATGGTT	tttaaagacaaaa TTAATGACCGAA	gatccttttgataactgtggcttaa 	ttcgcca 	tectatgteecagaattetettag 	cggaaccacatcatgcacttggagg 	ctagaaatagcctctgaaattctcc 	acacatcaattiggtigtigtiggacgg 	caacatgatcttcattggtggtatca 	gaagcctacattaatgcttctggag 	gtctcagaaattccagagaagaag 	tcagacagtcctgtggcggtacactg 	acttgttaagtggctaccccaaaacg 	cacccatgctggttcccatggtgttt 	gatgccttgtttggtgatcagatgg 		itcaatgacaaaagttacaaggaga
stagtcatgccagaggtgggttggcaactggg	tattcaacttcatataccctggaggatctggac 	oaatggaaagcacaagtacgaagtatatattt 	ltgacttatttttcaaattgcaggagtttg 		gttgccaaatatttctccctccctccgtggtc 	cttgaagaagtgcacagtgccctgctccttt 	ttctcagatgccatgacttcaaggagagagta(catttattatgccaccgttttttcaaaaatgcc 	cacctgttacggagtatgatctctacagco 	ttgttttggactatcccaaacccgtgatgcc 	tgccatcagggaaagccgttgcctatggaattt 	alggaattgtgttttctttgggatcaatg 	atygcaattgctgatgctttgggcaaaatcctt 	occgaccatcgaatcttgcgaacaacacgat 	ctycttggtcacccgatgacccgtgcctttatca 	gaaagcatatgcaatggcgttcccatggtgatga 	caatgcaaagcgcatggagactaagggagctggag 	ctgaagatttagaaatgctctaaaagcagtcat.
230 TTC	245 ct	305 ctc 350 CTC	365 ttt: 410 TTT	425 ac 11 470 AC	485 tt	545 at 590 AT	605 gg 650 GG	665 aa 710 AA	725 aaa 770 AAA	785 acti	845 ac	905 aace 950 AAC	965 cte	1025 gaa 1070 GAA	1085 at 130 AT	1145 atg 190 ATG	1205 aci 1250 ACi	1265 ctt
đ	Oy Dp	Oy Dp	Qy Db	Qy Dp	Oy Dp	Q Q	å å	Oy Db	oy Ob	Oy Dp	Oy Dp	O.Y Db	O.Y D.b	Qy Db	Oy Op	Oy Dp	Oy Db	Oy Op

1385 tgttctgggtggagtttgtgatgaggacacaagggcgccacacctgcgcccgcagcc 1444 1430 TGTTCTGGGTGGAGTTTGTGATGAGGCACAAGGGCGCCCCACACCTGCGCCCCCGCAGCCC 1489 1490 ACGACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCG 1549 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1684 1670 AATAAGGTAAAATTTTGAACCATTCCCTAGTCATTTCCAAACTTGAAAACAGAATCAGTG 1729 1730 TTAAATTCATTTTATTCTTATTAAGGAAATACTTTGCATAAATTAATCAGCCCCAGAGTG 1789 2030 TCTTTTGGCTTCTGCAGATGGTTGCAATTGATCTCTTAACCAATAATGGTCAGTCCTCAT 2089 1325 acatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctggccg 1384 1445 acgacetesectggtaceagtaceatteettggaegtgattggttteetettggeegteg 1504 1505 tgctgacactggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1564 ggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggga 1624 1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagcccagagtg 1744 ctttaaaaaaattctcttaaataaaaaataatagactcgctagtcagtaaagatatttgaat 1804 1805 atgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggac 1864 1865 gigcagacaggciggcatictagattactitictiacicigaaacaiggccigitiggga 1924 1985 tcttttggcttctgcagatggttgcaattgatc-cttaaccaataatggtcagtcctat 2043 2044 ctctgtcctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtaccttt 2103 2104 agagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttctt 2163 2150 AGAGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATGTTTTTT 2209 gctttggggaaaaagaatgatgctatgaaattggtggtggtgttttgagaagataatc 2223 2210 GCTTTGGGGAAAAAGAATGATGCTATGAAATTGGTGGGGGGGTGTATTTGAGAAGATAATC 2269 2224 attgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgct 2283 2270 ATIGCTTATSTCAAATGGAGCTGAATTTGATAAAAACCCAAAATACAGCTATGAGTGCT 2329 1370 ACATCATGCGCCTCTCCAGCCTTCACAAGGACCGCCCGGTGGAGCCGCTGGACCTGGCCG 2284 gggcaagtttactttttttctgatgtttcctacaact 2320 2330 GGCCAAGTTACTTTTTTTGATGTTTCCTCCAACT 2366 1565 1625 2164 q ò g ò g à 유 ò q 임 ŏ à g ö g à g à g ă g à g 셤 ò

PRI 22-JAN-2002

linear

mRNA

2423 bp

BC020971

BC020971

RESULT LOCUS 7

```
Matches 2255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Jolla, CA 92093,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                    Unpublished
                                                                                                                     AF462268
                                                                                                                                                                        AF462268
                                                                                                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      gene
                                                                                                                                                                                                                                                                                                              REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                        JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                AF462268
                                                                                                                                                                                                               KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FEATURES
                                                                                                                                                                                                                                                                                                                                                     TITE
                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1760 CTTTAAAAAATTCTCTTAAATAAAAATAATAGGCTGGCTAGTCAGTAAAGATATTGAAT 1819
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2120 GAGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGATTTTTTG 2179
                  1220 ACAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGACCTGAATGTTCTGGAAATGA 1279
                                                                                              1520 TGCTGACAGTGGCCTTCATCATCACTTTTAAATGTTGTGCTTATGGCTACCGGAAATGCTTGG 1579
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1640 AATAAGGTAAAATTTTGAACCATTCCCTAGTCATTTCCAAACTTGAAAACAGAATCAGGG 1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtg 1744
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2000 TCTTTTGGCTTCTGCAGATGGTTGCAATTGATCCTTAACCAATAATGGTCAGTCCTCATC 2059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2165 ctttggggaaaagaatgatgctatgaaattggtggtggtgtgtttgagaagataatca 2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1385 tgttctgggtggagtttgtgtgatgagcacaagggcgcgcacacacctgcgccccgcagccc 1444
                                                                                                                                                                                                                                                                   1400 TGTTCTGGGTGGAGTTTGTGATGAGGCACAAGGGCGCCCACCACCTGCGCCCCCGCAGCCC 1459
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1700 TTAAATTCATTTTATTCATTAAGGAAATACTTTGCATAAATTAATCAGCCCCAGAGTG 1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1805 atgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccattttcagaggac 1864
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1820 ATGTATCGTGCCCCCTCCGGTGTCTTTGATCAGGATGACATGTGCCATTTTTCAGAGGAC 1879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1865 gtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttggga 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1880 GIGCAGACAGGCIGGCATTCTAGATTACTTTTCTTACTCTGAAACATGGCCTGTTTGGGA 1939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1985 tettitggettetgeagatggttgeaattgateettaaeceaataatggteagteeteate 2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2225 ttgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctg 2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2240 TIGCITATGICAAAIGGAGCIGAAITIGATAAAAACCCAAAAIACAGCIAIGAAGIGCIG 2299
1205 acaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctggaaatga 1264
                                                                            1265 cttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggaga 1324
                                                                                                                                                    1325 acatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctggccg 1384
                                                                                                                                                                                                                                                                                                          1445 acgaceteacetggtaceagtaceatteettggacgtgattggttteetettggeegteg 1504
                                                                                                                                                                                                                                                                                                                                                                                    1505 tgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1564
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1625 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1684
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1745 ctttaaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttgaat 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1925 gtgcgggattcaaaggtggtcccaccgctgccctactgcaaatggcagttttaatctta 1984
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2105 gagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttcttg 2164
                                                                                                                                                                                                                                                                                                                                                                                                                   Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                       q
                                                                                                                                                                                                                                                             Ω
                                                                                                                                                                                                                                                                                                                                                                                Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ΩD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                  ŏ
                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ÓΥ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δŏ
```

```
FSLPSVVFARGIACHYLEEGAQCPAPLSYVPRILLGFSDAMTFKERVRNHIMHLEEHL
FCQYFSKNALEIASEILQTPVTAYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
CHQGKPLPMEFEAYINASGEHGIVVFSLGSMVSEIPEKKAMAIADALGKIPQTVLMRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TGTRPSNLANNTILVKWLPQNDLLGHPWTRAFITHAGSHGVYESICNGVPWVWMPLFG
DQMDNAKRMETKGAGVTLNVLEWTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
PLDLAVFWVEFVWRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                      linear PRI 07-FEB-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /translation="martgwrspiplcvsllltcgraeagkllvvpmdgshwrtmgsv
veklileghevvvvmpevswQlgkslnctvkTysTsYtlebldrefmdradagwkagv
rslfslflsssnGffnlffshcrslfndrklveYlkesSfdavfldPfdagcLlvaky
                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (21-DEC-2001) Pharmacology, UCSD, 9500 Gilman Drive, La
                                                                                                                                                                                                       Homo sapiens UDP-glucuronosyltransferase UGT1A8*1 (UGT1A8) mRNA, UGT1A8*1 allele, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       185 ttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaaga 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 50 GCTGCAGTTCTCTCATGGCTCGCACAGGGTGGACCAGCCCCATTCCCCTATGTGTTTTCTC 109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            125 gccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgaggtgg 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Huang,Y.-H., Nguyen,N., Geske,D. and Tukey,R.
Identification and functional characterization of UGT1A8*1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /product="UDP-glucuronosyltransferase UGT1A8*1"
/protein_id="AAL75964.1"
/db_xref="GI:18568219"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95.1%; Score 2207.4; DB 9; Length 2394; 97.3%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Huang,Y.-H., Nguyen,N., Geske,D. and Tukey,R. Direct Submission
                                                                                                                                                                                      MRNA
702 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                      2394 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 YGYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /tissue_type="colon"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             555 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /allele="UGT1A8*1"
                                                                                                                                                                                                                                                                                        AF462268.1 GI:18568218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /gene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /qene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            UGT1A8*2 and UGT1A8*3
                                                                                                                                                                                                                                                                                                                                                                                                                                                (bases 1 to 2394)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (bases 1 to 2394)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           513 c
     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
```

Page 6

```
g
                                                                                                                                                                                                                                             요
                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ă
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
 g
                                ŏ
                                                                                            à
                                                                                                                      g
                                                                                                                                                    ö
                                                                                                                                                                                   g
                                                                                                                                                                                                                 ă
                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                      Homo sapiens UDP-glucuronosyltransferase UGTlA8*2 (UGTlA8) mRNA, OGTLA8*2 allele, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FCOYFSKNALETASETLOTPVTAYDLYSHTSTWLLRTDFVLDVPRYWPNATFIGGIN
CHOGKPLPMEFEAYINASGEHGIVVFSLGSMVSEIPEKKAMAIADALGKIPQTVLWRY
TGTRPSNLANNTILVKWLPQNDLLGHPMTRAFITHAGSHGVYESICNGVPWYMMPLFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PLDLAVEWVEFVWRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
YGYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /trānslation-"marīgwīspiplcvslilicgfaeagkilvvpmdgshwfimgsv
Veklilrghevvvvmpevswglgkslncīvkīvsīsyīledidrefwdfadagwkagv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FSLPSVVFARGIGCHYLEEGAQCPAPLSYVPRILLGFSDAMTFKERVRNHIMHLEEHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RSLFSLFLSSSNGFFNLFFSHCRSLFNDRKLVEYLKESSFDAVFLDPFDACGLIVAKY
                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (21-DEC-2001) Pharmacology, UCSD, 9500 Gilman Drive, La
92033, USA
              2221 atcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagt 2280
2221 ATCATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCCAAAATACAGCTATGAAGT 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20 GCTGCAGTTCTCTCATGGCTCGCACAGGTGGACCAGCCCCATTCCCCTATGTGTTTTCTC 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Huang,Y.-H., Geske,D., Nguyen,N. and Tukey,R.
Identification and functional characterization of UGTlA8*1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              95.6%; Score 2218.4; DB 9; Length 2363; 97.4%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /product-"UDP-glucuronosyltransferase UGTlA8*2"
/protein_id="AAL75963.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches 61; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Huang,Y.-H., Geske,D., Nguyen,N. and Tukey,R. Direct Submission
                                                                                                                      2281 gctgggcaagtttactttttttttctgatgtttcctacaact 2320
                                                                                                                                       2281 GCTGGGCAAGTTTACTTTTTTCTGATGTTTCCTACAACT 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      692 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref-"GI:18568217"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tissue_type="colon"
1. 2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      551 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "UGT1A8*2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /gene="UGT1A8"
                                                                                                                                                                                                                                                                                      AF462267.1 GI:18568216
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /qene="UGT1A8"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                            UGT1A8*2 and UGT1A8*3
                                                                                                                                                                                                                                                                                                                                                                                 (bases 1 to 2363)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         (bases 1 to 2363)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      503 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .1626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 2255; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /allele=
                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted
Jolla, CA 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    617 a
                                                                                                                                                                                                                                                                                                                                                                                               Huang, Y
                                                                                                                                                                                                                                                                                                                       hunan.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  source
                                                                                                                                                                                                                            LOCUS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             gene
                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                              AF462267
                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PEATURES
                                                                                                                                                                                                                                                                                        VERSION
                                                                                                                                                 g
                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
 ð
                                                         à
                                                                                                                     à
```

```
1160 ATGAAAGCATATGCAATGGCGTTCCCATGGTGATGCCCTTGTTTGGTGATGATGC 1219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                965 ctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactg 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1025 gaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1085 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1100 ATCTGCTTGGTCACCCGATGACCCGTGCCTTTATCACCCATGCTGGTTCCCATGGTGTTT 1159
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1145 atgaaagcatatgcaatggcgttcccatggtgatgatgccttgtttggtgatcagatgg 1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 185 ttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaaga 244
                                                                                                                                                                          200 TIGTAGTCATGCCACAGGTGAGTTGGCAACTGGGAAAATCACTGAATTGCACAGTGAAGA 259
                                                                                                                                                                                                                                            245 cttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgccatg 304
                                                                                                                                                                                                                                                                                              260 CTTACTCAACCTCATACACTCTGGAGGATCTGGACCGGGAATTCATGGATTTCGCCGATG 319
                                                                                                                                                                                                                                                                                                                                                                                              320 CTCAATGGAAAGCACAAGTACGAAGTTTGTTTTCTCTATTTCTGAGTTCATCCAATGGTT 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           425 acttaaaggagagttcttttgatgcagtgtttctcgatccttttgataactgtggcttaa 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        440 ACTTARAGGAGAGTTCTTTTGATGCGGTGTTTCTTGATCCTTTTGATGCCTGTGGCTTAA 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  665 aacatttattatgccaccgtttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 785 actttgttttggactatcccaaaccgtgatgcccaacatgatttcattggtggtatca 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 800 ACTITGITITGGACTATCCCAAACCCGTGATGCCCAATATGATCTTCATTGGTGGTATCA 859
                                                                                                                                                                                                                                                                                                                                            305 ctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatgaca 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        545 atcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctcttag 604
```

ć	.,																		
•	a pos	09	120	180	240	300	36	420	480	540	009	099	720	780	840	006	096	1020	1080
Nicmototoco O. Takal	JEO, COMPETVACIVE O, MISHIGUCINES O, LINGE	ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 	tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggtat 	gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 	gtggttgtagtcatgccagagtgagttggcaactgggaagatcactgaattgcacagtg 	aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 	catgeteaatggaaagcacaagtacgaagtatatattetetattaatgggtteatacata 	gacatttttgacttatttttttcaaattgcaggagtttgttt	gaatacttaaaggagagttctttgatgcagtgtttctcgatccttttgataactgtggc 	ttaattgttgccaaatatttctccctcccttggtcttcgccagggaatactttgc 	cactatcttgaagaagtgcacagtgccctgctctcttcctatgtccccagaattctc 	ttagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttg 	gaggaacatttattatgccaccgtttttccaaaaatgccctagaaatgcctctgaaatt 	ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 	acggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggt 	atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 	ggagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaag 	aaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtac 	actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaa
tchaa	colleg	- -	61	121	181	241 6	301 0	361 9	421 9	481 1	541 (601	661 9	721 6	781 8	841 8	901 9	961 8	1021
×	3	QY Dp	Qy Dp	Qy Db	Qy Dp	Qy Db	QY	Qy Dp	Qy Db	QY	Qy Dp	Qy Dp	Qy Dp	Qy Db	Qy Db	Qy Dp	Qy Db	Qy Dp	Qy

Qy Db	1081	aacgatctgcttggtcacccgatgacccgtgccttatcacccatgctggttcccatggt 1140
QQ	1141	gtttatgaaagcatatgcaatggcgttcccatggtgatgatgccttgtttggtgatcag 1200
QJ Dp	1201	gagactaagggagctggagtgacctgaatgttctggaa 126
QZ Dp	1261	atgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaag 1320
QV	1321	gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg 1380
Qy	1381 1381	gccgtgttctgggtggagtttgtgatgaggagcacaaagggcgccacacctgcgcccgca 1440
Qy	1441	geccacgactcacctgtaccattacttggacgtgattggtttcctttggcc 1500
Qy	1501	gtcgtgctgacagtggccttcatcaccctttaaatgttgtgcttatggctaccggaaatgc 1560
Qy Db	1561	ttggggaaaaagggcgagttaagaaagcccacaaatccaagaccattgagaagtgggt 1620
Qy	1621 1621	gggaaataaggtaaaattttgaaccattcctagtcatttccaaacttgaaaacagaatc 1680
Qy Db	1681 1681	agtgitaaattoattitattottattaaggaaataottigoataaattaatoagooocag 1740
Qy	1741	agtgotttaaaaaattotottaaataaaaataatagaotogotagtoagtaaagatatti 1800
QZ	1801	gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccattttcaga 1860
Qy Db	1861	ggacgigcagacaggciggcattciagattacitticttacicigaaacaiggccigiti 1920
Qy Dp	1921 1921	gggagtgcgggattcaaaggtggtcccaccgctgcccctactgcaaatggcagttttaat 1980
Qy Db	1981 1981	cttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcct 2040
Oy Op	2041	catctctgtcctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacc 2100
QY	2101	tttagagigtaggigaaatgaaigaaiggctiggagigcactgagaacagcataigatt 2160

```
1021 ACTGGAACCCGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAA 1080
                    1081 aacyatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1140
                                                            1201 atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 1260
                                                                                                                                             1081 AACGATCTGCTCGCTCGATGACCCGTGCCTTATCACCCATGCTGCTGCTTGGT 1140
                                                                                                                  1321 gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagcgctggacctg 1380
                                                                                                                                                                                                                               1381 gccgtgttctgggtggagtttgtgatgaggcacaagggcgccacacctgcgcccgca 1440
                                                                                                                                                                                                                                           1321 GAGAACATCATGCGCCTCTCCAGCCTTCACAAGGACCGCCGGTGGAGCCGCTGGACCTG 1380
                                                                                                                                                                                                                                                                          1441 goccacgacotcacotggtaccagtaccattcottggacgtgattggttcctcttggcc 1500
                                                                                                                                                                                                                                                                                    1561 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggt 1620
                                                                                                                                                                                                                                                                                                                                                                        1621 gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 1680
                                                                                                                                                                                                                                                                                                                                                                                                              1861 GGACGTGCAGACAGGCTGGCATTCTAGATTACTTTTCTTACTCTGAAACATGGCCTGTTT 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1681 agtgttaaattcattttattcttattaaggaaatactttgcataaattaatcagcccag 1740
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1741 agtgctttaaaaaattctctttaaataaaaaataatagactcgctagtcagtaaagatatt 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1861 ggacgigcagacaggciggcaltciagaltactiticitactcigaaacaiggccigiti 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2041 catcicigitccigcitcataggigccaccitgigititaaagaagggaagcitigiacc 2100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1981 cttatctttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcct
                    à
                                                                               g
                                                                                                      ò
                                                                                                                       qq
                                                                                                                                                                                 ò
                                                                                                                                              ð
                                                                                                                                                              g
                                                                                                                                                                                                         g
                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                유
                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                     염
                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     윱
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
```

```
PRI 13-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DQMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSCHKDRPVE
PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
YGYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /translation="MACTGWTSPLPLCVCLLLTCGFAEAGKLLVVPMDGSHWFTMRSV
VEKLILEGHEVVVVWPEVSWQLGRSLNCTVKTYSTSYTLEDLDREFKAFAHAQWKAQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FSLPSVVFARGILCHYLEEGAOCPAPLSYVPRILLGFSDAMTFKERVRNHIMHLEEHL
LCHRFFKNALEIASEILQTPVTEYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHOCKPLPMEFEAYINASCEHGIVVFSLGSMVSEIPEKKAMAIADALGKIPOTVLWRY
TGTRPSNLANNTILVKWLPQNDLLGHPWTRAFITHAGSHGVYESICNGVPMVMMPLFG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RSIYSLLMGSYNDIFDLFFSNCRSLFKDKKLVEYLKESSFDAVFLDPFDNCGLIVAKY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                   Submitted (30-MRR-1998) Heritable Disorders Branch, NICHD, 9000 Rockville Pike, Bethesda, MD 20892, USA 3 (bases I to 2320) 2iotti, M., Potter, C. and Owens, I.S. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Submitted (12-400-1998) Heritable Disorders Branch, NICHD, 9000 Rockville Pike, Bethesda, MD 20892, USA Sequence Undate by submitter On Aug 13, 1998 this sequence version replaced gi:3025895.
2161 cttgctttygggaaaaagaatgatgctatgaaattggtggtggtggtgttatttgagaagata 2220
                                                                                                                                                                                                                                                                                                                              ARUJODINB 11near PRI 13-1 Homo Saptens UDP-glucuronosyltransferase 1A9 (UGILA9) mRNA, complete cds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 2320; DB 9; Length 2320; 100.0%; Pred. No. 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ciotti, M., Potter, C. and Owens, I.S.
Human phenol metabolizing UDP-glucuronosyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /product="UDP-glucuronosyltransferase 1A9"
                                                                                                                                                                              2281 gctgggcangtttacttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                          2281 GCTGGGCANGTTTACTTTTTTCTGATGTTTCTACAACT 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  670 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Clotti, M., Potter, C. and Owens, I.S. Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /organism="Homo sapiens'
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              /protein_id="AAC31425.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /db_xref="GI:3025896"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'tissue_type="liver"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               547 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /chromosome="2"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /gene="UGT1A9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /gene="UGT1A9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /codon_start=1
                                                                                                                                                                                                                                                                                                                                                                                                                                      AF056188.1 GI:3414797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (basses 1 to 2320)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (basies 1 to 2320)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /map="2q37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  495 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Unpublished
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                               ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AUTHORS
                                                                                                                                                                                                                                                                                                                    AF056188
                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                           VERSION
                                                                                                                                 qq
                                                                                                                                                                              ò
                                                                                        ò
```

ö

```
/db_xref="GI:17048800"
/translation="MACTGWTSPLPLCVCLLLTCGFAEAGKLLVVPMDGSHWFTMRSV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RSIYSLLMGSYNDIFDLFFSNCRSLFKDKKLVEYLKESSFDAVFLDPFDNCGLIVAKY
FSLPSVVFARGILCHYLEEGAQCPAPLSYVPRILLGFSDAMTFKERVRNHIMHLEEHL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TGTRPSNLANNTILVKWLPQNDLLGHPMTRAFITHAGSHGVYESICNGVPWVMMPLFG
DQMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VEKLILRGHEVVVVMPEVSWQLGRSLNCTVKTYSTSYTLEDLDREFKAFAHAQWKAQV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LCHRFFKNALEIASEILQTPVTEYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CHOGKPLPMEFEAYINASGEHGIVVFSLGSMVSEIPEKKAMAIADALGKIPQTVLWRY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear PAT 21-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhin1; Hominidae; Homo.
                                                                                                                                                                                   1861 GGACGTGCAGACAGGCTGGCATTCTAGATTACTTTTCTTACTCTGAAACATGGCCTGTTT 1920
                                                                    1921 gggagtgcgggattcaaaggtggtcccaccgctgcccctactgcaaatggcagttttaat 1980
                                                                                             2040
                                                                                                                                                                                                                                                       2041 catctctgtcctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacc 2100
                                                                                                                                                                                                                                                                                                                                                2101 tttagagtgtaggtgaaatgaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                                                                                                                                                                                                                                                             2101 TTTAGAGTGTAGGTGAAATGAATGGATGGCTTGGAGTGCACTGAGAACAGCATATGATTT 2160
                                                                                                                                                                                                                                                                                                                                                                                                                                           2161 cttgctttggggaaaaagaatgatgctatgaaattggtggtggtgttgtttgagaagata 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2221 atcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagt 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2221 ATCATTGCTTATGTCAAATGGAGCTGAATTTGATAAAAACCCAAAATACAGCTATGAAGT 2280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Flavopiridol drug combinations and methods with reduced side
                                                                                                                                                               1981 cttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcct
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2281 GCTGGGCAAGTTACTTTTTTTTGTGTTTCCTACAACT 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2281 gctgggcaagtttactttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            670 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 (sites)
Ratain,M.J., Innocenti,F. and Iyer,L.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Patent: WO 0180896-A 3 01-NOV-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3 from Patent WO0180896.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /protein_id="CAD12275.1"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ARCH DEVELOPMENT CORPORATION (US)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        YGYRKCLGKKGRVKKAHKSKTH'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               547 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AX286764.1 GI:17048799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               495 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ಹ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 809
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               effects
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DEFINITION
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AX286764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                      g
                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                        D
                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                    δ
                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                       ò
```

100.0%; Score 2320; DB 6; Length 2320;

Query Match

```
961 aaagctatggeaattgctgatgctttgggcaaatccctcagacagtcctgtggcggtac 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              961 AAAGCTATGGCAATTGCTGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGCGGTAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1021 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaa 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       541 cactatottgaagaaggtgcacagtgccctgctctttcctatgtccccagaattctc 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       841 atoaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         901 GGAGAACATGGAATTGTGGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAGAAG 960
                                                                                                                                                                                                                                                                                                                                    301 catgotcaatggaaagcacaagtacgaagtatatattototattaatgggttcatacaat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    421 gaatacttaaaggagagttctttgatgcagtgtttctcgatccttttgataactgtggc 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421 GAATACITAAAGGAGAGTICITITGAIGCAGIGITITCICGAICCITITGAIAACIGIGGC 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481 ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                541 CACTATCTTGAAGAAGGTGCACAGTGCCCTGCTCCTTTCCTATGTCCCCAGAATTCTC 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601 ttagggttctcagatgccatgactttcaaggagagagagtacggaaccacatcatgcacttg 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661 GAGGAACATTIATTATGCCACCGTTTTTTCAAAAATGCCCTAGAAATAGCCTCTGAAATT 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                721 CICCAAACACCIGITACGGAGIAIGAICTCTACAGCCACACAICAAITIGGIIGTIGCGA 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              781 acggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggt 840
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         841 ATCAACTGCCATCAGGGAAAGCCGTTGCCTATGGAATTTGAAGCCTACATTAATGCTTCT 900
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     901 ggagaacatggaattgtggttttctcttttgggatcaatggtctcagaaattccagagaag 960
                                                                                                                                                                                                                           12] gggagccactggttcaccatgaggtcggtggtggagaactcattctcagggggcatgag 180
                                                                                                                                                                                                                                                                                                             gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg 240
                                                                                                                                                                                                                                                                                                                                                                                                241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300
                                                                                                                                                                                                                                                                                                                                                                                                                           61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120
                                                                                                                                                                                  61 TGTCTGCTGCTGACCTGTGGCTTTGCCGAGGCAGGGAAGCTACTGGTAGTGCCCATGGAT 120
                                                                                                                                                                                                                                                                    121 GGGAGCCACTGGTTCACCATGAGGTCGGTGGTGGAGAAACTCATTCTCAGGGGGGCATGAG 180
                    Gaps
                                                                                                1 CTCAGCTGCAGTTCTCTGATGGCTTGCACAGGGTGGACCAGCCCCCTTCCTCTATGTGTG 60
                                                           1 ctcaqctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  661 gaggaacatttattatgccaccgtttttcaaaaatgccctagaaatagcctctgaaatt
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481 TTAATTGTTGCCAAATATTTCTCCCTCCCTCCGTGGTCTTCGCCAGGGGAATACTTTGC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0;
                    0; Indels
100.0%; Pred. No. 0; ive 0; Mismatches
                    Matches 2320; Conservative
  Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                      g
                                                                                                                                                  ŏ
                                                                                                                                                                                      q
                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                           Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Óγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  쉼
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
```

```
FSLPSVVFARGILCHYLEEGAQCPAPLSYVPRILLGFSDAMTFKERVRNHIMHLEEHL
LCHRFFKNALEIASEILQTPVTEYDLYSHTSIWLLRTDFVLDYPKPVMPNMIFIGGIN
CHQGKPLPWEFEAYINASGEHGIVVFSLGSMYSEIPEKKAMAIADALGKIPQTVLWRY
                                                                               /translation="MACTGWTSPLPLCVCLLLTCGFREAGKLLVVPWDGSHWFTMRSV
VEKLILEGHEVVVVWPEVSWQLGRSLNCTVKTYSTSYTLEDLDREFKAFAHAQWKAQV
RSIYSLLMGSYNDIFDLFFSNCRSLFKDKKLVEYLKESSFDAVFLDPFDNCGLIVAKY
                                                                                                                                                                                                                                                            TGTRPSNLANNTILVKWLPQNDLLGHPWTRAFITHAGSHGVYESICNGVPMYMPIFG
DQMDNAKRMETKGAGVTLNVLEMTSEDLENALKAVINDKSYKENIMRLSSLHKDRPVE
PLDLAVFWVEFVMRHKGAPHLRPAAHDLTWYQYHSLDVIGFLLAVVLTVAFITFKCCA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        61 TGTCTGCTGCTGACCTGTGGCTTTGCCGAGGCAGGGAAGCTACTGGTAGTGCCCATGGAT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 GGGAGCCACTGGTTCACCATGAGGTCGGTGGTGGAGAAACTCATTCTCAGGGGGCGATGAG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     181 gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        24] aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              241 AAGACTTATTCAACTTCATATACCCTGGAGGATCTGGACCGGGAGTTCAAGGCTTTTGCC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           301 catyctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 GACATITITGACTTATTTTTTCAAATTGCAGGAGTTTGTTTAAAGACAAAAATTAGTA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              gaatacttaaaaggagagttcttttgatgcagtgtttctcgatccttttgataactgtggc 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ttaattyttyccaaatatttctccctccctccytygtcttcyccaygggaatactttyc 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       481 TTAATTGTTGCCAAATATTTCTCCCTCCCTCCGTGGTCTTCGCCAGGGGAATACTTTGC 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              541 cactatettgaagaaggtgeacagtgeeetgeteetettteetatgteeecagaattete 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    gaggaacatttattatgccaccgtttttcaaaaatgccctagaaatgcctctgaaatt 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661 GAGGAACATTTATTATGCCACCGTTTTTTCAAAATGCCCTAGAAATAGCCTCTGAAATT 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       721 ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 CTCAGCTGCAGTTCTCTGATGGCTTGCACAGGGTGGACCAGCCCCCTTCCTCTATGTGTG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 2320; DB 6; Length 2320; 100.0%; Pred. No. 0; trive 0; Mismatches 0; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                               670 t
                         /protein_id="CAD12274.1"
/db_xref="GI:17048798"
                                                                                                                                                                                                                                                                                                                                                     YGYRKCLGKKGRVKKAHKSKTH"
                                                                                                                                                                                                                                                                                                                                                                            547 g
/codon_start=1
                                                                                                                                                                                                                                                                                                                                                                               495 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 100.0
Matches 232C; Conservative
                                                                                                                                                                                                                                                                                                                                                                            608 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              481
```

ò

ò g q

ò g Ω

9

q δ g οŽ g $^{\circ}$ a ŏ g ò a δ g a

à

g

ð

```
1021 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaa 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1381 gccgtgttc:tgggtggagtttgtgatgaggcacaagggcgccacacctgcgccccgca 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1501 GTCGTGCTGACAGTGGCCTTCATCACCTTTAAATGTTGTGCTTATGGCTACGGAAATGC 1560
                                                                                                                                                                                                                                                                                                                                              961 aaagctatggcaattgctgatgctttggggcaaaatccctcagacagtcctgtggcggtac 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1021 ACTGGAACCCGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAA 1080
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1081 aacgatetgettggteaccegatgaceegtgeetttateaceeatgetggtteeeatggt 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1081 AACGATCTGCTTGGTCACCCGATGACCCGTGCCTTTATCACCCATGCTGGTTCCCATGGT 1140
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1141 gittaigamagcataigcaaitggggitcccaiggigaigaigcittgitiggigaicag 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1141 GTTTATGANAGCATATGCAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAG 1200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1201 atggacaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctggaa 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1201 ATGGACAA:GCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGACCTGAATGTTCTGGAA 1260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1261 atgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaag 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1261 ATGACTTC::GAAGATTTAGAAAATGCTCTAAAAGCAGTCATCAATGACAAAAGTTACAAG 1320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1321 GAGAACATCATGCGCCTCTCCAGCCTTCACAAGGACCGCCCGGTGGAGCCGCTGGACCTG 1380
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1381 GCCGTGTTCTGGGTGGAGTTTGTGATGAGGCACAAGGGCGCGCCACACCTGCGCCCGCA 1440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1501 gtcgtgetgacagtggcettcatcacetttaaatgttgtgettatggetaeeggaaatge 1560
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1561 TTGGGGAAMAAAGGGCGAGTTAAGAAAGCCCACAAATCCAAGACCCATTGAGAAGTGGGT 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1621 gggaaatanggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 1680
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1741 AGTGCTTTAAAAAATTCTCTTAAATAAAATAATAGACTCGCTAGTCAGTAAAGATATTT 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1801 gaatatgtatogtgcccctccggtgtctttgatcaggatgacatgtgccatttttcaga 1860
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1861 ggacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgttt 1920
                                                                                                                                                                                                                                                                                                                                                                                                   961 AAAGCTATGGCAATTGCTGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGCGGTAC 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1561 ttggggaamaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggt 1620
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1741 agtgetttaaaaaattetettaaataaaaataatageetegetagteagtaaagatatt 1800
781 acggactt:gttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggt 840
                                                           781 ACGGACTT::GTTTTGGACTATCCCAAACCCGTGATGCCCAACATGATCTTCATTGGTGGT 840
                                                                                                                841 atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900
                                                                                                                                                                     841 ATCAACTGCCATCAGGGAAAGCCGTTGCCTATGGAATTTGAAGCCTACATTAATGCTTCT 900
                                                                                                                                                                                                                                901 ggagaacatggaattgtgggttttctctttgggatcaatggtctcagaaattccagagaag 960
                                                                                                                                                                                                                                                                                     901 GGAGAACA:GGAATTGTGGTTTTCTCTTTGGGATCAATGGTCTCAGAAATTCCAGAGAAG 960
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1321
                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                              ă
                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
```

Run on:

Title:

```
AF461738 Rattus no
M84124 Human UDP-9
AC006985 Homo sapi
AC026497 Homo sapi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             linear PAT 21-NOV-2001
                                                                                                                                                                                                          AF461735 Rattus no
                                                                                                                                                                                                                  BC019434 Mus muscu
AF011902 Oryctolag
                                                                                                                                                                                                                                       L27122 Mus musculu
AB018478 Ovis arie
                                                                                                                                                                                                                                                                                                     F297093 Homo sapi
U75903 Rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                     M34007 Rat bilirub
AF461737 Rattus no
                                                                                                                                                                                                                                                                                                                                                                                                                                          U42604 Human UDP-9
J02612 Rat UDP-glu
U20551 Rattus norv
                                                                                                                                                                                                                                                                                                                                  Homo sapi
Macaca mu
                                                                                                                                                                                                                                                                                                                                                                                                  U16818 Mus musculu
                                                                                                                                                   AF030310 Homo sapi
U89507 Human UDP-9
                                                                                                                                                                                   AF104337 Macaca fa
U89508 Human UDP-9
                                                                                                                                                                                                                                                                                                                                                                            AF039138 Felis cat
AC091778 Papio cyn
                                                                           AF104336 Macaca fa
                                                                                                                    M57899 Human bilir
AX336711 Sequence
                                                                                                                                                                         AF104338 Macaca fa
                                                                                                                                                                                                                                                                                                                                                                                                            U09101 Oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
                                                               S55985 Homo sapien
                                                                                     AK025403 Homo sapi
M57951 Human bilir
                                                                                                          BC019861 Homo sapi
                                                                                                                                          Homo sapien
                                                                                                                                                                                                                                                                                                                          AF297091 Homo sapi
                                                                                                                                                                                                                                                                                                                                                          Macaca fa
                                                                                                                                                                                                                                                                                                                                                                    Macaca mu
                     ношо зарі
                                   sapi
                                           AF462268 Homo sapi
                                                      Homo sapi
AX286762 Sequence
            Seguence
                                  Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 (sites)
Ratain,M.J., Innocenti,F. and Iyer,L.
Flavopiridol drug combinations and methods with reduced side
                                                                                                                                                                                                                                                                                                                                            AF360121
AF104339
AY029169
                       AF056188
                                                                                                                                          J04093
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note="unnamed protein product"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Patent: WO 0180896-A 1 01-NOV-2001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2320 bp
Sequence 1 from Patent W00180896.
AX286762
AX286762.1 GI:17048797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /organism="Homo sapiens"
/db_xref="taxon:9606"
19. .1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ARCH DEVELOPMENT CORPORATION (US)
                                                                                                                                                                                                                                                 AB018478
AF461738
                                                                                                                                                                                                                                                                                                                                                                                                                         RATUDPGTA
                                                                                                                                                                                                                                                                                                                                                                                                                                                     RATUDPGT
RNU20551
RATUGT
                                                                                                                    HUMHUGBR1
AX336711
                                                                                                                                                                      AF104338
AF104337
HSU89508
                                                                                              HUMHUGBR2
                                                                                                                                                   AF030310
HSU89507
                                AF462267
AF462268
                                                                                                                                          HUMUGILEA
                                                                                                                                                                                                                   BC019434
                                                                                                                                                                                                                                                                                AC006985
AC026497
                                                                                                                                                                                                                                                                                                              RNU75903
                                                                                                                                                                                                                                                                                                                                                         AF104339
AY029169
                                                                                                                                                                                                                                                                                                                                                                            AF039138
AC091778
                                                                                                                                                                                                                                                                                                                                                                                                   MMU16818
                                                                                                                                                                                                                                                                                                                                                                                                                                 AF461737
                                                                           AF104336
                                                                                                                                                                                                                            AF011902
                                                      BC020971
                                                                                      AK025403
                                                                                                                                                                                                                                                                      HUMUGT03
                                                                                                                                                                                                                                                                                                                                   AC019072
 AX286762
                                                                                                                                                                                                                                                                                                                                               AF360121
                                                                                                                                                                                                                                                                                                                                                                                                            OCU09101
                                                                                                                                                                                                                                                                                                                                                                                                                                            HSU42604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                        10
                                                                                                                                                                                                                                       10
                                                                                                                                                                                                                                                                                                              0
                                                                                                                                                                                                                                                                                                                                                                                                  10
                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    .2320
           2320
2320
2320
2353
22394
23395
23396
23388
23388
2422
2422
2422
2422
2423
11593
                                                                                                                                                                                                                  2203
1590
2155
                                                                                                                                                                                                                                                            2282
1561
68770
                                                                                                                                                                                                                                                                                           76619
                                                                                                                                                                                                                                                                                                                                               1602
                                                                                                                                                                                                                                                                                                                                                                                                                      1765
                                                                                                                                                                                                                                                                                                                                                                                                                                           1244
1927
2239
2484
                                                                                                                                                                                                                                                                                                    198872
                                                                                                                                                                                                                                                                                                                                    148438
                                                                                                                                                                                                                                                                                                                 2301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
 100.0
100.0
100.0
                               effects
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                         878.6
                                                                                                                                                                                                                                                                                                                                                                            819.8
799.8
                                2218.4
2207.4
2194.6
                                                                                                                    1610.8 1539.2
                                                                                                                                                   1493.8
1484.2
                                                                                                                                                                                                                  1129.4
1123.4
1110.4
1105.2
                                                                                                                                                                                                                                                                                          1004.4
1004.4
                                                                                                                                                                                                                                                                                                                                                                                                                                                     777.8
774
772.2
                                                                                                                                                                                                                                                                     1004.4
1004.4
                                                                                                                                                                                                                                                                                                                                                                                                   794
                                                                                                                                                                                                                                                                                                                                                                                                            788.4
                                                                                                                                          1539.2
                                                                                                                                                                                               1463.6
1157.8
                                                                2156.
                                                                                                                                                                                    1470.
                                                                                                 1636.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ACCESSION
VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
AX286762
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TITLE
                                                                                                                                                                                                                                                                                                                                               33
34
35
36
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             LOCUS
                                                                                                                                                                                                                                                                                                                                                                                          O
                                                                                                                                                                                                                                                                                                                                      ပ
                                                                                    (without alignments)
5885.745 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                          1 ctcagctgcagttctctgat......ttctgatgtttcctacaact 2320
                                                                        August 21, 2002, 02:50:17 ; Search time 8248.67 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Description
                                                                                                                                                                                                                  3595312
          GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                             1797656 segs, 10463268293 residues
                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SUMMARIES
                                                                                                                                                                                                                                                                  Post-processing: Minimum Match 0%
Maximum Match 1100%
Listing first 45 summaries
                                                 OM nucleic - nucleic search, using sw model
                                                                                                                                                              IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_htg_inv:*
em_htg_other:*
em_htgo_inv:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ID
                                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   em_htg_hum:*
                                                                                                                   US-09-835-082-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                     gb_ro:*
gb_sts:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    em_fun:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              em_hum:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           em_pat:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_sts:*
                                                                                                                                                                                                                                                                                                                        gb_ba:*
gb_htg:*
                                                                                                                                                                                                                                                                                                                                            gb_in:*
gb_om:*
gb_ov:*
gb_pat:*
gb_ph:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                              gb_vi:*
em_ba:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_in:*
em_mu:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       em_or:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      em_ph:*
                                                                                                                                                                                                                                                                                                                                                                                                                                            db_sy:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             em_om:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                em_pl:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          em_ro:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 em_un:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                      *: un _qb
                                                                                                                                                                                                                                                                                                                                                                                                            gb_pr:*
                                                                                                                                                                                                                                                                                                              GenEmb1:*
                                                                                                                                                              Scoring table:
                                                                                                                              Perfect score:
                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                         Sequence:
                                                                                                                                                                                             Searched:
```

Result No.

```
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                  q
                                                                                  ŏ
                                                                                                                       셤
                                                                                                                                                                ö
                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  d
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             //Otta-Torgan: Kidney, Vector: pDNR-LIB (Clontech); Site_1:
Sfil (9gcogcucuggc); Site_2: Sfil (ggcoattatggc); 5' and
3' adaptors were used in cloning as follows: 5' adaptor
sequence: 5'-ACGGCCAPTATGGCC3' and 3' adaptor sequence:
5'-ATTCTAAAGGCCGACATG-dT(3) BN-3' (where B = A,
C, or G and N = A, C, G, or T). Average insert size 1.65
kb (range 0.5 + 4.0 kb). 15/15 colonies contained inserts
by PCR. This library was enriched for full-length clones
and was constructed by Clontech Laboratories (Palo Alto,
CA). Note: this a NIH_MC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BG400591 833 bp mRNA linear EST 12-MAR-2001 602464244F1 NIH_MGC_75 Homo sapiens CDNA clone IMAGE:4592315 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                    604 gggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggag 663
                                                                                                  664 gaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctc 723
                                                                                                                                                                                       1 (bases 1 to 833)
NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
544 tatcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctctta 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Email: cgapbs-remail.nih.gov
Tissue Procurement: CLOWTECH Laboratories, Inc.
CDNA Library Preparation: CLOWTECH Laboratories, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 found through the I.M.A.G.E. Consortium/LLNL at: http://mage.llnl.gov
http://mage.llnl.gov
http://mage.llnl.gov
High quality sequence stop: 800.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /organism="Homo sapiens"
/db_xref="taxon.9606"
/clone="InhaGE:4592315"
/clone_lib="NHH_MGC_75"
/lab_host="DH10B_(T1 phage-resistant)"
                                                                                                                                                                                                                                                                                                                                     784 gactttgttttggac-tatcccaaacccgtgatg 816
                                                                                                                                                                                                                                                                                                                                                        796 GCCCITGTTTGGGACTTATTCCGAACCCGTGCTG 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG400591,1 GI:13294039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  206 a
                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BG400591
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                              δ
                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                ò
                                                                              ò
```

```
537 ttgccactarcttgaagaaggtgcacagtgccctgctcctcttcctatgtccccagaat 596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         306 toaatggaaugcacaagtacgaagtatatattctctattaatgggttcatacaatgacat 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         421 gaatact-tuaaggagagttcttttgatgcagtg---tttctcgatccttttgataactg 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    597 tctcttaggyttctcagatgccatgactttcaaggagagagtacggaaccacatcatgca 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601 TCTCTTAGGGTTCTCAGATGCCATGACTTTCAAGGAGAGAGTACGGAACCACATCATGCA 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  721 GAAATTCTCCAAACACCTGTTACGGAGTATGATCTCTAACAGCCACACTTCAATTGGTTG 780
                                                                                                                                                                                                                                                                                                                                                                                                             301 TCAATGGAANGCACAAGTACGAAGTATATATTCTCTATTAATGGGTTCATACAATGAGCA 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                  366 ttttg----acttatttttttcaaattgcaggagtttgtttaaagacaaa-aaattagta 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361 TTTTGTGACKTATTTTTTTTAAAGTTGCAGGAGTTTGTTTAAAGACAAAGAAATTAGTA 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              421 GAATACTGTWAAGGAGGTTCTGTTGATGCAGTGTGATCTCGAGTCCGTTTGATAACTGG 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 541 TTGCCACTA'PCTTGAAGAAGGTGCACAGTGCCCTGCTCCTCTTTCCTATGTCCCCAGAAT 600
                775 ttgcgaacgyactttgttttggactatcccaaacccgtgatgcccaacatgatc 828
```

Search completed: August 21, 2002, 09:39:10 Job time: 24958 sec

Gaps

27.6%; Score 640; DB 10; Length 833; 91.1%; Pred. No. 1.3e-156; tive 0; Mismatches 60; Indels 14

Best Local Similarity 91.19 Matches 760, Conservative

Query Match

ŏ

ò g ò q δ Q οy q ò q δ g ò g δ g

```
/tissue_type="adenocarcinoma cell line"
/tab.host="nth108 (phage-resistant)"
/note="Organ: colon; Vector: pOTB7; Site_1: XhoI; Site_2:
ECORI, EDNA made by oligo-dT priming. Directionally
cloned into ECORI/XhoI sites using the following 5'
adaptor: GGCAGGG(G). Size-selected >500bp for average
insert size 1.8kb. Library constructed by Ling Hong in
the laboratory of Gerald M. Rubin (University of
California, Berkeley) using ZAP-CDNA synthesis kit
(Stratagene) and Superscript II RT (Life Technologies)"
86 a 190 c 207 g 246 t
                                                                                                                                                                                               DNA Sequencing by: NIH Intramural Sequencing Center
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/LLNL at:
     NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         125 gccactggttcaccatgaggtcggtggtggagaaactcattctcaggggggatgggtgg 184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                198 TIGIAGICAIGCCAGAGGIGAGIIGGCAACIGGAAAGAICACIGAAIIGCACAGIGAAGA 257
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4.25 acttaaaggagagttcttttgatgcagtgtttc-tcgatccttttgataactgtggctta 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         185 ttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaaga 244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               245 cttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcccatg 304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  305 ctcaatggaaagcacaagtacgaagtatattctctctattaatgggttcatacaatgaca 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            365 tttttgacttattttttcaaattgcaggagtttgtttaaagacaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        438 ACTIAAAGGAGAGITCITIGGAIGCAGIGITICGIGGAICCITITGAIACCIGIGGCITA 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5 getgeagttetetgatggettgeacagggtggaccagececetteetetgtgtgtgte 64
                                                                                                                                                                                .M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Match 27.6%; Score 641.2; DB 10; Length 829; Local Similarity 89.9%; Pred. No. 6.4e-157; es 732; Conservative 0; Mismatches 78; Indels 4;
                                                                                                                                                   CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Plate: LLCM1458 row: c column: 05
High quality sequence stop: 795.
                                                                           Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="NIH_MGC_15"
                                                                                                                                                                                                                                                                                                                                                                                                                                         /clone="IMAGE:4660540"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              =
=
=
=
                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                 ocation/Qualifiers
                                                                                                                                                                                                                                                                        http://image.llnl.gov
Plate: LLCM1458 row:
                                                   Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 732; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 186 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BASE COUNT
     AUTHORS
TITLE
                                                      JOURNAL
                                                                             COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 21-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi; Mammalla; Butheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 829)
                                                                                                                                                                                                                                                           1198 cagatggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctg 1257
                                                                                                                                                                   1078 caaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccat 1137
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1378 ctggccgtgttctgggttggagtttgtgatgaggcacaagggcgcacacctgcgcccc 1437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1737 ccagagtgetttaaaaaaattetetttaaataaaaaatagaetegetagteagtaaagat 1796
                                                                                                                                                                                                                                                                                                                                                                                                                                                         1258 gaaatgacttotgaagatttagaaaatgototaaaagoagtoatoaatgacaaagttac 1317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1318 aaggagaacatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggac 1377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1438 gcagcccacgacctcacctggtaccagtaccattccttggacgtgattggtttcctcttg 1497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1498 geogicgicgacagiggecticateaectitaaaigtigictateggetaceggaaa 1557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1558 tgcttggggaaaaaagggcgagttaagaaagcccacaaaatccaagacccattgagaagtg 1617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1618 ggtgggaaataaggtaaaa-ttttgaaccattccctagtcatttccaaacttgaaaacag 1676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1677 aatcagtgttaaattcattttattcttattaaggaaatactttgcataaattaatcagcc 1736
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BG469506 829 bp mRNA linear EST 21-MAR-602532818F1 NIH_MGC_15 Homo sapiens CDNA clone IMAGE:4660540 5'
                                                                                                                                                                                                                                                                                                                                                                                                       121 CAGATGGACAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTG 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 GAAATGACTTCTGAAGATTTAGAAAATGCTCTAAAAGCAGTCATCAATGACAAAGTTAC 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             481 TGCTTGGGGAAAAAAGGGCGAGTTAAGAAAGCCCACAAATCCAAGACCCATTGAGAAGTG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 CTGGCCGTGTTCTGGGTGGAGTTTGTGATGAGGCACAAGGGCGCCCCACACACCTGCGCCCC 360
                                                                                                                         4; Gaps
                                                                                                                                                                                                  2 CAAAACGAICIGCTIGGICACCCGAIGACCCGIG-CIITAICACCCAIGCIGGIICCCAI 60
                                                                   27.8%; Score 644; DB 10; Length 723; 96.7%; Pred. No. 1.1e-157; tive 0; Mismatches 20; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG469506.1 GI:13401781
                                                                                                                  Matches 700; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
BG469506
                                                                                             Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1797 attt 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                719 ATGT 722
                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 14
BG469506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            KEYWORDS
ORIGIN
```

Οy

qq ò ö g

임

4; Gaps

```
source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ACCESS ION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG424452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D.
Contact: Robert Strausberg, ph.D.
Email: gapbs-remail.nih.gov
Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael R.
Emmert-Buck, M.D., Ph.D.
CDM Library Preparation: M. Bento Soares, Ph.D.
CDMA Library Preparation: M. Bento Soares, Ph.D.
DNA Sequencing by: Washington University Genome Sequencing Center
Clone distribution: NCI-CGAP clone distribution information can be
found through the I.M.A.G.: Consocrtium/LLNL at:
www-bio.ilni.gov/bb/image/image.html
Insert Length: 1491
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /dev_stage="adult"
//dev_stage="adult"
//dev_stage="adult"
//dev_stage="bilion" (phage-resistant)"
//dev_stage="bilion" (phage-resistant)"
//dev_stage="develope" (pharmacia) with a modified polylinker: lat strand cDNA was prepared from pooled tung tumor tissue, and was then primed with a Not I - oligo(dT) primer: Double-stranded cDNA was ligated to Eco RI adaptors (Pharmacia), digested with Not I and cloned into the Not I and Eco RI sites of the modified pT7T3 vector. Library went through one round of normalization. Library constructed by Bento Soares and M.
                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                          1 (bases 1 to 764)
NCI-CGAP http://www.ncbi.nim.nih.gov/ncicgap.
National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /tissue_type="squamous cell carcinoma, poorly differentiated (4 pooled tumors, including primary and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1605 ccatigagaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaa 1664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1665 acttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcata 1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1785 gtcagtaaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgaca 1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          22; Indels 1; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       695 CCTTGAAACAGCATCAAGTGTTAAATTCATCTTATTCTTATTAAGAAAATACTTTGCATA 636
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      // Match 28.9%; Score 669.4; DB 9; Length 764; Local S.milarity 96.8%; Pred. No. 2.5e-164; nes 693; Conservative 0; Mismatches 22; Indels 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 others
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        232 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="IMAGE:2405161"
/clone_iib="NCI_CGAP_Lul9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seq primer: -40UP from Glbco
High quality sequence stop: 454.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  133 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fatima Bonaido.
  AI831562
AI831562.1 GI:5452233
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        156 c
                                                                                                                                                                                                                                                          Tumor Gene Index
Unpublished (1997)
                                                                                                     Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242 a
                                                                               human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BASE COUNT
                                                                                                   ORGANISM
ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                JOURNAL
                                                                                                                                                                             REFERENCE
                                                 KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEATURES
                                                                                                                                                                                                                                 TITLE
                           VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

```
/issue_type="renal cell adenocarcinoma"
//issue_type="renal cell adenocarcinoma"
//ab_nogt="Dath10B (phage-resistant)
//note="Organ: kidney; Vector: pOTB7; Site_1: XhoI; Site_2:
ECORI; cDNA made by oilgo-dr priming. Directionally
cloned into ECORIZAhoI sites using the following 5'
adaptor: GGGACGAG(0). Size=selected >500bp for average
insert size i.8kb. Library constructed by Ling Hong in
the laboratory of Gerald M. Rubin (University of
California, Berkeley) using ZAP-cDNA synthesis kit
(Stratagene) and Superscript II RT (Life Technologies)."
02 a 160 c 170 g 191 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EST 14-MAR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota, Metazoa, Chordata, Cranlata, Vertebrata, Euteleostomi,
Mammaiis, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG424452 72 14-MAR-20
602447772F1 NIH_MGC_14 Homo sapiens cDNA clone IMAGE:4586368 5',
                                                                                                                                                                                                                                                                                                                                                                                         2085 agggaagctitgtacctitagagtgtaggtgaaatgaatgaatggcttggagtgcactga 2144
                                                                                                                            1965 aaatggcagttttaatcttttttggcttctgcagatggttgcaattgatccttaacc 2024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2205 tgtatttgaŋaagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaa 2264
                                                                                                                                                                                                                                                            2025 aataatggtcagtcctcatctctgtcctgcttcataggtgccaccttgtgtgtttaaaga 2084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1905 gaaacatgg∵ctgtttgggagtgcgggattcaaaggtggtcccaccgctgccctactgc 1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CDNA Library Preparation: Ling Hong/Rubin Laboratory CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Consolistribution: MGC clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
                                                                                                                                                                                                                                                                                                276 AGGGAAGCTITGTACCTITAGAGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGA 217
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "( bases 1 to 723)
NIH-MGC http://mgc.ncl.nih.gov/.
NiH-MGC http://mgc.ncl.nih.gov/.
Unpublished (1999)
Contact: Robert Strausberg, Ph.D.
                                396 AAATGGCAGTTTTAATCTTTATGGCTTCTGCAGATGGTTGCAATTGATCCTTAACC 337
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     216 GAACAGCATATGATTTCTTGCTTTGGGGAAAAGAATGATGCTATGAAATTGGTGGTGG 157
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plate: LLCM1314 row: p column: 17
High quality sequence stop: 711.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /clone="IMAGE:4586368"
/clone_lib="NIH_MGC_14"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Email: sgapbs-r@mail.nih.gov
Tissue Procurement: DCTD/DTP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG424452.1 GI:13330958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA sequence.
BG424452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG424452
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                numan.
```

```
/tissue_type="adenocarcinoma cell line"
/lab_host="BH10B (phage=resistant)"
/note="Organ: colon; Vector: pOTB7; Site_l: XhoI; Site_2:
BCORI; CDNA made by oligo-dr priming. Directionally
cloned into ECORI/XhoI sites using the following 5'
adaptor: GGCAGGAG(G). Size-selected >SOODP for average
insert size 1.8kb. Library constructed by Ling Hong in
the laboratory of Gerald M. Rubin (University of
California, Berkeley) using ZAP-CDNA synthesis kit
(Stratagene) and Superscript II RT (Life Technologies)"
77 a 168 c 184 g 168 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              764 bp mRNA linear EST 21-DEC-1999 wj39b01.x1 NCI_CGAP_Lu19 Homo sapiens cDNA clone IMAGE:2405161 3' similar to gb:M57899 UDP-GLUCURONOSYLTRANSFERASE LA PRECURSOR, MICROSOMAL (HUMAN);, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1090 cttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgtttatgaa 1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1150 agcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcagatggacaat 1209
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1270 gaagatttagaaaatgetetaaaageagteateaatgaeaaagttaeaaggagaaeate 1329
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1450 ctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctg 1509
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       970 gcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactggaacc 1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1210 gcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatgacttct 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1330 atgrgcctctccagccttcacaaggaccgccggtggagccgctggacctggccgtgttc 1389
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1390 tgggtggagtttgtgatgaggcacaagggcgcgccacacctgcgccccgcagcccacgac 1449
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1510 acagtggccttcatcacctttaaatgttgttgcttatggctaccggaaatgcttggggaaa 1569
                                                                                                                                                                                                                                                                                                                                                                                                                       182 CTIGGTCACCCGATGACCCGTGCTTTATCACCCATGCTGGTTCCCATGGTGTTATATGAA 241
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     62 GCAATTGCTGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGGGGGTACACGGGAACC 121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             242 AGCATATGCAATGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAGATGGACAAT 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     362 GAAGATTTAGAAAATGCTCTAAAAGCAGTCATCAATGACAAAAGTTACAAGGAGAACATC 421
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 542 CTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCGTGCTG 601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         602 ACAGTGGGCTTCATCACCTTTAAATGTTGTGCTTATGGCTACCGGAAATGCTTGGGGAAA 661
                                                                                                                                                                                                                                                                                                                                                                               3; Indels 1; Gaps
                                                                                                                                                                                                                                                                                                                                     DB 10; Length 697;
                                                                                                                                                                                                                                                                                                                                29.3%; Score 679.2; DB 10; 99.4%; Pred. No. 6.5e-167; Live 0; Mismatches 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1570 aaagggcgagttaagaaagcccacaaaatccaagacc 1605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 662 AAAGGGCGAGTTAAGAAAG-CCACAAATCCAAGACC 696
                                                                                                                                                                                                                                                                                                                                                                             Matches 692; Conservative
                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                        177 a
                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                        BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AI831562/c
                                                                                                                                                                                                                                                            ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EST 15-MAY-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryoča; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1 (bases 1 to 697)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BG747143 697 bp mRNA linear EST 15-WAY-2C 602704364F1 NIH_MGC_15 HOMO Sapiens CDNA clone IMAGE:4857831 5',
                                                                                                                                                                                                                                                  1281 aaatgototaaaaagoagtoatoaatgacaaagttacaaggagagaacatoatgogoototo 1340
                                                                                                                                                             1341 cagcetteacaaggacegeeeggtggageegetggacetggeegtgttetggggtggagtt 1400
                                                                                                                                                                                                                                                                                                                                                    1461 ccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctgacagtggcctt 1520
                                                                                                                                                                                                                                                                                                                                                                                                                                           1641 gaaccattccct-agtcatttccaaacttgaaaacagaatcagtgttaaattcattttat 1699
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1700 tottattaaggaaatactttgcataaattaatcagccccagagtgctttaaaaaaattctc 1759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CDNA Library Preparation: Ling Hong/Rubin Laboratory
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: NHH Intramural Sequencing Center
Clone distribution: MGC clone distribution information can be
found through the I.M.A.G.E. Consortium/Linl at:
Plate: LLCM1710 row: o column: 16
High quality sequence stop: 684:
                                                                                                                                                                                 181 GGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTGGAAATGACTTCTGAAGATTTAGA 240
                                                                                                              241 AAATGCTCTAAAAGCAGTCATCAATGACAAAAGTTACAAGGAGAACATCATGCGCCTCTC 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
1760 ttaaaataaaaataatagactcgctagtcagtaaagatattt 1800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          717 TAAATAACAAATAATAGACTCGCTAGTCAGAACAGATCTCT 757
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone_lib="NIH_MGC_15"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="IMAGE:4857831"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BG747143.1 GI:14057796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BG747143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG747143
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOURCE
                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                         Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

```
9
                                                                                                                                                                                                                                                                                                                                   /lab_host="hpH10B (phage-resistant")
/note="organ: bladder; Vector: pCMV-SPORT6; Site_1: Not1;
Site_2: Sall: Cloned unidirectionally; oligo-dr primed.
Average insert size 1.7 kb. Library enriched for
full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1537 tgtgcttatggctaccggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaa 1596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1777 actcgctagtcagtaaagatatttgaatatgtatcgtgccccctccggtgtctttgatca 1836
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1837 ggatgacatgtgccattttcagaggacgtgcagacaggctggcattctagattactttt 1896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1957 cctactgcaaatggcagttttaatcttatcttttggcttctgcagatggttgcaattgat 2016
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1597 tccaagacccattgagaagtgggtgggaaataaggtaaaattttgaaccattccctagtc 1656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1717 tttgcataaattaatcagccccagagtgctttaaaaaattctcttaaaataaaaaatag 1776
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2017 ccttaaccaataatggtcagtcctcatctctgtcctgcttcataggtgccaccttgtgtg 2076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1897 cttactctgaaacatggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgcc 1956
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
ENA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be flour of through the I.M.A.G.E. Consortium/LLNL at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 TCCAAGACCCATTGAGAAGTGGGTGGGAAATAAGGTAAAATTTTGAACCATTCCCTAGTC 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        121 ATTCCAAACTTGAAAACAGAATCAGTGTTAAATTCATTTTATTCTTAATGGAAATAC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 301 GGATGACATGTGCCCATTTTTCAGAGGACGTGCAGACAGGCTGGCATTCTAGATTACTTTT 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   421 CCTACTGCAAATGGCAGTTTTAATCTTATCTTTTGGCTTCTGCAGATGGTTGCAATTGAT 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  481 CCTTAACCAATAATGGTCAGTCCTCATCTCTGTCCTGCTTCATAGGTGCCACCTTGTGTG 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="transitional cell papilloma, cell line"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             7; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 TGTGCTTATGGCTACCGGAAATGCTTGGGGAAAAAGGGCGAGTTAAGAAAGCCCACAAA 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          tch 30.0%; Score 695.4; DB 10; Length 881; al Similarity 97.7%; Pred. No. 4e-171; 769; Conservative 0; Mismatches 11; Indels 7;
                                                                                                                                    row: n column: 18
                                                                                                                                                                                                                         /organism="Homo sapiens"
                                                                                                                                                     High quality sequence stop: 763.
Location/Qualifiers
                                                                                                                                                                                                                                                                                          /clone_lib="NIH_MGC_93"
                                                                                                                                                                                                                                                                       /clone-"IMAGE:4514129"
                                                                                                                                                                                                                                                 /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORIGIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    යු
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         අ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
```

```
/db_xref="taxon:>vvv"
/clone="ImAGE:3852811"
/clone=lib="NHLMGC_65"
/clone=lib="NHLMGC_65"
/lissue_type="adenocarcinoma"
/lab_host="DH10B (phage-resistant)"
/note="Organ: colon: Vector: pcWV-SPORT6; Site_1: NotI;
/note="Organ: colon: Vector: pcWV-SPORT6; Site_1: NotI;
/note="Organ: colon: Vector: pcWV-sport6; Site_2: SalI; Cloned unidirectionally. Primer: Oligo dT.
                                                                                                                                                                                                                                                                                                                                                         linear EST 20-OCT-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens
Bukaryota, Metazoa, Chordata, Cranlata, Vertebrata, Euteleostomi,
Mammalia, Euthheria, Primates, Catarrhini, Hominidae, Homo.
I (bases 1 to 1005)
                                                                                                                                                                                                                                                                                                                                                       BE870911 1005 bp mRNA 11near EST 20-OCT-20 601448862F1 NIH_MGC_65 Homo sapiens cDNA clone IMAGE:3852831 5',
1041 tottgcgaacaacacgatacttgttaagtggctaccccaaaacgatctgcttggtcaccc 1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1101 gatgacccgtgcctttatcacccatgctggttcccatggtgtttatgaaagcatatgcaa 1160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1161 tggcgttcccatggtgatgatgatgccttgtttggtgatcagatggacaatgcaaagcgcat 1220
                                                                                                                           NIH MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Incyte Genomics, Inc. Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1221 ggagactaagggagctggagtgaccctgaatgttctggaaatgacttctgaagatttaga 1280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    121 TGGCGTTCCCATGGTGATGATGCCCTTGTTTGGTGATCAGATGGACAATGCAAAGCGCAT 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      61 GATGACCCGTGCCTTTATCACCCATGCTGGTTCCCATGGTGTTTATGAAAGCATATGCAA 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 TCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAAAACGATCTGCTTGGTCACCC 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 10; Length 1005;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        29.3%; Score 680.6; DB 10 96.8%; Pred. No. 3.2e-167;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             209 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Plate: LLAM9575 row: 1 column: 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      High quality sequence stop: 645.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           246 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                  BE870911.1 GI:10319687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Technologies.
268 c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches 737; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1001
                                                                                                                                                                                                                                                                                                                                                                                                    mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Similarity
                                                                                                                                                                                        2314 tacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             282 a
                                                                                                                                                                                                                                     777 TACAACT 783
                                                                                                                                                                                                                                                                                                                                                                                                                              BE87091
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      source
                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                           ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REFERENCE
                                                                                                                                                                                                                                                                                                       RESULT 10
BE870911
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ORIGIN
                                                                                             à
                                                                                                                                          g
       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              쉽
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    윱
```

```
BG289777 881 bp mRNA linear EST 21-FEB-2001 602385071F1 NIH_MGC_93 Homo sapiens cDNA clone IMAGE:4514129 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
                                                                                                                                                                                                                                                                                                                                                                                    2204 gtgtatttgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaaccca 2263
1547 gctaccggaaatgcttggggaaaaagggcg-agttaagaaagcccacaaatccaagacc 1605
                                                                                               1606 cattgagaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaa 1665
                                                                                                                                                                                                                                                                                            1725 aattaatcagcccc-agagtgctttaaaaaattctcttaaataaaaattaatagactcgct 1783
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1844 atgtgccatttttcagaggacgtgcagacaggctggcattctagattacttttcttactc 1903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1904 tgaaacatggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgccctactg 1963
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1964 caaatggcagttttaatcttatcttttggcttctgcagatggttgcaattgatccttaac 2023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2024 caataatggtcagtcctcatctctgtcctgcttcataggtgccaccttgtgtgttttaaag 2083
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1666 cttgaaaacagaatca-gtgttaaattcattttattcttattaaggaaatactttgcata 1724
                                                                                                                                                                                                                                                                                                                 818 GCTACCGAAAATGCTGGGGGAAAAAAGGGCGAATTTAAGNAAGCCCNCAATCCCAAGAAC 759
                                                                                                                                                758 ATTIGAGAAGTGGGTGGGAATAAAGGTAAAATTTGAACCATTCCCCAAGTCATTTCCCAA 699
                                                                                                                                                                                                                                           698 CIGGAAAACAGAATCAGGGGTAAAATTCATTTTATTTTAAGGAAATACTTGGCATA 639
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              458 TGAAACATGGCCTGTTTGGCAGTGCGGGATTCAAAGGTGGTCCCACGGCTGCCCTACTG 399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        338 CAATAATGGTCAGTCCTCATCTCTGTCGTGCTTCATAGGTGCCACCTTGTGTGTTTAAAG 279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                National Institutes of Health, Mammalian Gene Collection (MGC)
Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               158 GIGTATITIGAGAAGATAATCATIGCTTAIGTCAAAIGGAGCTGAAITTGAIAAAAACCCA 99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo. 1. (bases 1 to 881)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NIH-MGC http://mgc.nci.nih.gov/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BG289777.1 GI:13045907
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            mRNA sequence.
BG289777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 human .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TITLE
JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BG289777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                              Д
                                                                                                  ò
                                                                                                                                              g
                                                                                                                                                                                                                                           qq
                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                        Д
                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ολ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="Organ: Kidney; Vector: pT7T3D-Pac (Pharmacia) with a modified polylinker; Site_1: Not I; Site_2: ECO RI; Plasmid DNA from the normalized library NCI_GGAP_Kid5 was prepared, and ss circles were made in vitro. Following HAP purification, this DNA was used as tracer in a subtractive hybridization reaction. The driver was PCR-amplified cDNAs from a pool of 5,000 clones made from the same library (clonelDs 1329312-1325631, 1471368-1472993 and H492104-1493255). Subtraction by Bento Soares and M.
                                                                                                                                                                                                                                                                                                                                                                                                                                        tb24d12.x1 NCI_CGAP_Kid12 Homo sapiens cDNA clone IMAGB:2055287 3' similar to gb:M57899 UDP-GLUCURONOSYLTRANSFERASE lA PRECURSOR, MICROSOMAL (HUMAN);, mRNA sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Emmert-Buck, M.D., Ph.D. cDN. Rento Soares, Ph.D. CDNA Library Preparation: M. Bento Soares, Ph.D. CDNA Library Arrayed by: Greg Lennon, Ph.D. DNA Sequencing by: Meshington University Genome Sequencing Center Clone distribution: NCI-CGAP clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              National Cancer Institute, Cancer Genome Anatomy Project (CGAP),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Christopher Moskaluk, M.D., Ph.D., Michael
                                                                                                                                                                                          683 gttttttcaaaaatgccctag--aaatagcctctgaaattctcc-aaacacctgttacgg 739
                                                                                                  740 agtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttggact 799
                                                                                                                                              720 AGTATGATCTCTACAGCCACACATCAACTCGGCTCGTTGCGAACGGACTTGTCTTGGACT 779
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /clone_lib="MCI_GGAP_Kidl2"
/tissue_type="2 pooled tumors (clear cell type)"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 30.0%; Score 695.8; DB 9; Length 818; Best Local Similarity 95.9%; Pred. No. 3e-171; Matches 745; Conservative 0; Mismatches 29; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      found through the I.M.A.G.E. Consortium/LLNL at: www-bio.llnl.gov/bbrp/image/image.html
Seq primer: -40UP from Gibco
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 (bases 1 to 818)
NCI-CGAP http://www.ncbi.nlm.nih.gov/ncicgap
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         258 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 High quality sequence stop: 453.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                /clone="IMAGE:2055287"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      134 g
                                                                                                                                                                                                                                                                                            858 aaagccgttgcctatggaatttga 881
                                                                                                                                                                                                                                                                                                                                        839 AAAGCCGTTGCCTATGGATTTGGA 862
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Fatima Bonaldo.
177 c 134
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AI307269.1 GI:4002458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Unpublished (1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pumor Gene Index
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                        AI307269/c
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                        q
                                                                                               à
                                                                                                                                              셤
                                                                                                                                                                                            ô
```

181 gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg 240 	241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300 11111111111111111111111111111111111	307 CHICHTHININININININININININININININININININI	0 agaatacttaaaggaggttc-ttttgatgcagtgtttctcgatccttttgataactgtg 47	4/9 gcttaattgttgccaatattctccctccctcgtggtcttcgccagggaatactt 538	599 tettaggsteteagatgecatgaettteaaggagagatacggaacea-ateatgeac 657 			774 gttgcgaacggactttgttttggactatcccaaaccgt-gatgcccaacatgatctt 830 	831 cattggtgtatcaactgccatcagggaaa 860 	RESCUT 7 BI762347 BI76349 COMMENT COMMENT CONTACT: Robert Strausberg, Ph.D. BIMALI CORPORT STRAUSPERG, Ph.D. COMMENT CONTACT: Robert Strausberg, Ph.D. COMMENT CONTACT: Robert Strausberg, Ph.D. DIABASP Arrayed By: The I.M. A.G. B. Consortium (LLNL) DIABASP Arrayed By: Incyte Genomics, Inc. CONN Library Preparation: Life Technologies, Inc. CONN CONN CONN CONN CONN CONN CONN CONN
Oy Dp	oy Oy	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	A G S	6666	oy Oy	3 a 3	ි <u>අ</u>	o o	Oy Ob	B1762347 LOCUS DECINITIC ACCESSION VERYWORDS SOURCE ORGANIS TITLE JOURNAL TOTALE COMMENT

```
//ncte="Organ: pooled colon, kidney, stomach; Vector: pcMV-SPORT6: Site_1: Not1; Site_2: EcoRV (destroyed); RNA source anonymous pool of 3 colons, age 26 yo male, 49 yo female, 71 yo male colon; 46 yo female. Library is oligo-dr primed and directionally cloned (EcoRV site is oligo-dr primed and directionally cloned (EcoRV site is oligo-dr primed and directionally cloned (EcoRV site is destroyed upon cloning). Average insert size 1.4 kb, insert size range 1.3 kb. Library is normalized and enriched for full-length clones and was constructed by C. Gruber (Invitrogen). Research Genetics tracking code 023. Note: this is a NHL MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                386 attgcaggaytttgtttaaagacaaaaattagtagaatacttaaaggagagttctttg 445
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        86 ccgaggcagygaagctactggtagtgcccatggatgggagccactggttcaccatgaggt 145
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 CCGAGGCAGGGAACTACTGGTAGTGCCCATGGATGGGAGCCACTGGTTCACCATGAGGT 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          206 gttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcatataccc 265
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tecettecgiggtettegecaggggaataetttgecactatettgaagaaggtgeacagt 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         481 TCCCCTCCGTGGTCTTCGCCA-GGGAATACTTTGCCACTATCTTGAAGAAGGTGCACAGT 539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          326 gaagtatatatuttetetattaatgggtteatacaatgaeattttttgaettatttttteaa 385
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         361 ATTGCAGGAGTTTGTTTAAAGACAAAAATTAGTAGAATACTTAAAGGAGAGTTCTTTTG 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        26 gcacagggtygaccagccccttcctctatgtgtgtgtgttgttgctgctgacctgtggctttg 85
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GCACAGGGTGGACCAGCCCCTTCCTCTATGTGTGTGTCTGCTGCTGACCTGTGGCTTTG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30.5%; Score 707.4; DB 10; Length 884; 94.0%; Pred. No. 2.8e-174; tive 0; Mismatches 42; Indels 10;
found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLAMINIAT row: h column: 01
High quality sequence stop: 796.
Location/Qualifiers
                                                                                                                                                                                                                     /clone_lib="NIH_MGC_116"
/lab_host="DH10B"
                                                                                                                                           /organism="Homo sapiens"
/db_xref="taxon:9606"
                                                                                                                                                                                             /clone="IMAGE:5189040"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 94.0 Matches 812; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                           source
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       506
                                                                                                 FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
```

```
Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             source
                                                                                                                                                                                                                             DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BASE COUNT
ORIGIN
                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                    ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                    REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                        AUTHORS
                                                                                                                                                                                           BI759297
                                                                                                                                                                                                                                                                                                        KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FEATURES
                                                                                                                                                                                                                                                                                      VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                           TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMMENT
                                                                                                                                                                        RESULT
                                                                                                                                                                                                                                                                                                                             SOURCE
                                        οqα
                                                                               οy
                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q<sub>O</sub>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                  /tissue_type="transitional cell papilloma, cell line"
/lab.host="hH10B (phage-resistant)"
/note="organ: bladder: Vector: pcWv-SPORT6; Site_1: Not1;
Site_2: Sall; Gloned unidirectionally; oligo-dr primed.
Average insert size 1.7 kb. Library enriched for full-length clones and constructed by Life Technologies.
hull-length clones and constructed by Life Technologies.
155 c 202 g 266 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1687 aaattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtgct 1746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1867 gcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttgggagt 1926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1987 ttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatctc 2046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2047 tgtcctgcttcataggtgccaccttgtgt-gtttaaagaagggaagctttgtacctttag 2105
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2106 agigtaggig-aaatgaatgaatggcitggagtgcactgagaacagcatatgattict-t 2163
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1447 gacctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtg 1506
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1507 ctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgggg 1566
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1627 taaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgtt 1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1807 gtategtgeceeeteeggtgtetttgateaggatgaeatgtgeeattttteagaggaegt 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      181 TAAGGTAAAATTTTGAACCAFTCCCTAGTCATTTCCAAACTTGAAAACAGAATCAGTGTT 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    601 IGTCCTGCTTCATAGGTGCCACCTTGTGTGGTTTAAAGAAGGGAAGCTTTGTACCTTTAG 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 CTGACAGTGGCCTTCATCACCTTTAAATGTTGTGCTTATGGCTACCGGAAATGCTTGGGG 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   661 AGTGTAGGTGAAAATGAATGAATGGTTGGAGGTGCACTGAGAACAGCATATGATTTCTGG 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GACCTCACCTGGTACCAGTACCATTCCTTGGACGTGATTGCTTTCCTCTTGGCCGTCGT 60
                                                                                                                                                                                                                                                                                                                                                                                                31.1%; Score 722.4; DB 10; Length 882; 94.5%; Pred. No. 3.3e-178; tive 0; Mismatches 41; Indels 5;
found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Plate: LLAMIO407 row column: 12
High quality sequence stop: 746.
Location/Qualifiers
                                                                                                                 /organism="Homo sapiens"
                                                                                                                                                                      /clone_lib="NIH_MGC_93"
                                                                                                                                                      /clone="IMAGE:4516403"
                                                                                                                                    /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                  792;
                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                      Local
                                                                                                                                                                                                                                                                                                                         BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                             FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            QY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         òγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ō
```

```
pCWV-SPORTS; Site_1: NotI; Site_2: EcoRV (destroyed); RNA source anonymous pool of 3 colons, age 26 yo male, 49 yo female, 71 yo male colon, 46 yo male kidney, and pool of 2 stomachs, 62 yo male and 70 yo female. Library is oligo-dT primed and directionally cloned (EcoRV site is destroyed upon cloning). Average insert size 1.4 kb, insert size range 1.3 kb. Library is normalized and enriched for full-length clones and was constructed by Cgruber (Invitrogen). Research Genetics tracking code
                                                                                                                                                                                                                                                                                                                                                         EST 25-SEP-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                     BI759297 876 bp mRNA linear EST 25-SEP-2º
603042939F1 NIH_MGC_116 Homo sapiens cDNA clone IMAGE:5183433 5'
2164 gotttggggaaaagaatgatgctatgaaattggtggtggtgtatttgagaagataatc 2223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/Link at:
http://image.llnl.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             67 TGTCTGCTGCTGCTGTGGCTTTGCCGAGGCAGGCAAGCTACTGGTAGTGCCCATGGAT 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               121 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        10; Gaps
                                                                                                                               2224 attgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtg 2281
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="Organ: pooled colon, kidney, stomach; Vector:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               7 CTCAGCTGCAGTTCTCTGATGCTTGCACAGGGTGGACCAGCCCCCTCCTCTATGTGTG 66
                                                                                                                                                                  cDNA Library Preparation: Life Technologies, Inc. cDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31.1%; Score 720.8; DB 10; Length 876; 94.6%; Pred. No. 8.6e-178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Contact: Robert Strausberg, Ph.D.
Email: cgapbs-r@mail.nih.gov
Tissue Procurement: Life Technologies, Inc.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plate: LLAM11457 row: n column: 10
High quality sequence stop: 735.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib="NIH_MGC_116"
/lab_host="DH10B"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         'organism="Homo sapiens"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NIH-MGC http://mgc.nci.nih.gov/.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /clone="IMAGE:5183433"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /db_xref="taxon:9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BI759297.1 GI:15750875
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    023. NC.
193 C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 876)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Matches 823; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                       mRNA sequence.
BI759297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                                                                                                                                                                                                                                                                                                                                     BI759297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             226
```

```
1607 attgagaagigggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaac 1666
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Contact: Robert Strausberg, Ph.D.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              882 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Email: cgapbs-r@mail.nih.gov
Tissue Procurement: ATCC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG291462.1 GI:13049372
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (bases 1 to 882)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BG291462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BG291462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         human.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VERSION
KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BG291462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                          g
                                                                                       ò
                                                                                                                             a
                                                                                                                                                                   ò
                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                              BG402908 868 bp mRNA 1inear EST 12-MAR-2001 602418710F1 NIH_MGC_93 Homo sapiens CDNA clone IMAGE:4525755 5',
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /tissue_type="transitional cell papilloma, cell line"
/lab host="OHIOB (phage-resistant)"
/note="Organ: bladder: Vector: pcMv-SPORT6; Site_1: NotI;
/note="Organ: bladder: Vector: pcMv-SPORT6; Site_1: NotI;
Average insert size 1.7 kb. Library enriched for full-length clones and constructed by Life Technologies.
Note: this is a NIH_MGC Library."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Marmalla; Eutheria; Primates; Catarrhini; Hominidae; Homo.
1736 cccagagtgctttaaaaaattctctta--aataaaaataatagactcgctagtcagtaaa 1793
                                                                                                                                                                 1794 gatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatt 1853
                                                                                                                                                                                                           1808 GGTTCTAGTATATGTGATGTG-CTTTTCCAGTATCTTCAGTCTAGACAACTCTTGCCATC 1866
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1487 gtttcctcttggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatg 1546
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1547 gctaccggaaatgcttggggaaaaagggcgagttaagaaagcccacaaatccaagaccc 1606
                                                                                                                           1748 TCAGCACATTTAAAAATAATAATAATAACAATCTAATTGCTGGCCACACCCATCAGGGAA 1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cortact: Robert Strausberg, Ph.D.
Ball: gapbS-r@mall.inh.gov
Tissue Procurement: ATCC
CDN Library Preparation: Life Technologies, Inc.
CDN Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
DNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28; Indels 6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 (bases 1 to 868)
NIE-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GTTTCCTCTGGGCCGTCGTGCTGACAGTGGCCTTCATCACCTTTAAATGTTGTGGTTATG 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31.9%; Score 741.2; DB 10; Length 868; 95.9%; Pred. No. 3.8e-183; tive 0; Mismatches 28; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         found through the I.M.A.G.E. Consortium/LINL at: http://image.llnl.gov
                                                                                                                                                                                                                                                 1854 tttcagaggacgtgcagacaggctggcattctagatt 1890
                                                                                                                                                                                                                                                                                            1867 TGT-TGGTAATTTACAGAAAGTCTGGCACTCTGCTTT 1902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Homo sapiens"
/db_xref="taxon:9606"
/clone="IMAGE:4525755"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /clone_lib-"NIH_MGC_93"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          High quality sequence stop: 785.
Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            BG402908.1 GI:13296356
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Unpublished (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        804; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                      mRNA sequence.
BG402908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                              BG402908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                              DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AUTHORS
                                                                                                                                                                                                                                                                                                                                                                        BG402908
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FEATURES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COMMENT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                 δ
                                                                                                                                                                                                         g
```

```
EST 21-FEB-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Eukaryoʻa; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         602387347F1 NIH_MGC_93 Homo sapiens cDNA clone IMAGE:4516403 5', mRNA sequence.
                                                                                                                                                                                                                 2205 tgta--tttyagaagataatcattgcttatgtcaaatggagctgaatttgataaaaaccc 2262
                                                                                                                               1907 aacatggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgcccctactgcaa 1966
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1967 atggcagtt:taatcttatcttttggcttctgcagatggttgcaattgatccttaaccaa 2026
                                        1667 ttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcataaa 1726
                                                                                                                                                                                                                                                                                                                                                                                                                      CDNA Library Preparation: Life Technologies, Inc.
CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL)
CDNA Sequencing by: Incyte Genomics, Inc.
Clone distribution: MGC clone distribution information can be
                                                              661 ACAGACATARGATTTTCTTGCTTTGGGGAAAAAGAATGATGCTATGAAAATGGTGGTGG 720
121 ATTGAGAAG%GGGTGGGAAATAAGGTAAAATTTTGAACCATTCCCTAGTCATTTCCAAAC 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        721 TGTAATTTGAGAAAGATAATCCATTGTTATGTCCAAATGGGGTGAATTTGATAAAAACCC 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NIH-MGC http://mgc.nci.nih.gov/.
National Institutes of Health, Mammalian Gene Collection (MGC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
```

```
LFCDQMDNAKRMETRCAGYTLNVLEMTADDLENALKTVINNKSYKENIMRLSSLHKDR
PIEDLDLAVFWEYWRHKACAPHIRPAAHDLTWYQYHSLDVJGFLLAIVLTVVFIVFK
CCAYGCRCCFGGGRGYVKKSHRSKTH"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GINCYTKKPLSOEFEAYVNASGEHGIVVFSLGSMVSEIPEKKAMEIAEALGRIPQTVL
WRYTGTRPSNLAKNTILVKWLPQNDLLGHPKTRAFITHSGSHGIYEGICNGVPMVMMP
                                                                                                               /tissue_type="kidney"
/clone_lib="RIKEN full-length enriched mouse cDNA library"
/dev_stage="adult"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      /translation="MDTGLCVPLRGISGLLLLLCALPWAEGAKVLVLPWAEGSQWLSMR
DVVRELHARGHQTVVLASEVTVHIKGEDFFTLKTYAFPYTKEEYQQEILSDIEKTFKT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     QHFVKAFFETTASIRNFFDLYSNSCIALLHNKMLIQQLNSSFFDVILTDPIFPCGAVL
AKYLQIPAVFILRSLSCGIEYEATQCPNPSSYIPNLLTRLSDHMDFLQRVQNMLYYLV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LKY ICRLSITPYESLASELLQREVSLVEVLSHASVWLFRGDFVLDYPRPIMPNMVFIG
                                                                                                                                                                                                                                                                                                                                 /note="UDP-glucuronosyltransferase 1 family, member 1 data source:MGD, source key:MGI:98898, evidence:ISS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         536 tttgccactatcttgaagaggtgcacagtgccctgctctttcctatgtccccagaa 595
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          59 tgtgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatgg 118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  74 IGCTCCTGCTGTGCCCTGCCCTGGGCTGAAGGTGCTGGTGTTACCCATGG 133
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119 atggggagccactggttcaccatgaggtcggtggtggagaaactcattctcaggggggatg 178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        134 AGGGCAGCCAGTGGCTGAGCATGAGGGATGTTGTGCGGGGAGCTCCACGCCCGAGGTCACC 193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       179 aggtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacag 238
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  194 AGACTGTGGTCCTGGCTTCAGAGGTGACTGTGCACATCAAAGGAGAAGACTTCTTCACCC 253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             239 tgaagacttattcaacttcataccctggagg---atctggaccgggagttcaaggctt 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     254 TCAAAACCTATGCCTTTCCATATACCAAGGAAGAATATCAGCAAGAAATACTGAGCGACA 313
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   296 ttgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcat 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              314 TIGAGAAGACCTITAAAACACATTITGIGAAGGCCTTTTTTGAAACTACAGCAICTA 373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      374 TAAGAAACTITITIGACCICTACICAAATTCTTGTATAGCTTTATIGCACAATAAGAIGC 433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            416 tagtagaatacttaaaggagagttcttttgatgcagtgtttctcgatccttttgataact 475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    434 TGATCCAGCAACTGAATTCCAGTTTTTTGATGTGATCTTAACAGACCCCATTTTCCCCT 493
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   476 gtggcttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatac 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 494 GTGGAGCAGTACTGGCCAAGTACCTACAGATTCCTGCTGTGTTTATTCTGCGTTCTTT 553
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 33.6%; Score 780.2; DB 11; Length 2202; Best Local Similarity 65.9%; Pred. No. 3.1e-193; Matches 1211; Conservative 0; Mismatches 613; Indels 13; Gaps
/db_xref="MGD:MGI:1910585"
                                                                                                                                                                                                                                                                                                                                                                                                                                                           /protein_id="BAB22243.1"
/db_xref="GI:12832754"
                      /db_xref="taxon:10090"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             514 g
                                                           /clone="0610013P07"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /note="putative"
2202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /note="putative"
514 c 514
                                                                                                                                                                                                                                            /gene="Ugtlal"
28. .1629
                                                                                                                                                                                                                                                                                                       /gene="Ugtlal"
                                                                                                                                                                                                                                                                                                                                                                                                                                 on_start=1
                                                                                        /sex="male"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      polyA_site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                  gene
                                                                                                                                                                                                                                                                      CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
```

```
956 agaagaaagctatggcaattgctgatgctttgggcaaatcctcagacagtcctgtggc 1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         974 AGAAGAAAGCCATGGAAATTGCTGAGGCTTTGGGCAGAATTCCTCAGACGGTCCTGTGGC 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1016 ggtacactggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctac 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1076 cccaaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttccc 1135
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1094 CCCAAAATGATCTGCTTGGTCATCCAAAGACTCGGGCATTCATCACACACTCTGGCTCCC 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1136 atggtgtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtg 1195
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1154 ATGGTATTTATGAAGGAATATGCAATGGAGTTCCGATGGTGATGATGCCCCCTATTTGGCG 1213
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1196 atcagatggacaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttc 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1214 ATCAGATGGACAATGCCAAGCGCATGGAAACTCGGGGAGCTGGGGTGACCCTGAATGTCC 1273
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1256 tggaaatgacttctgaagatttagaaaatgctctaaaaagcagtcatcaatgacaaagtt 1315
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1316 acaaggagaacatcatgcgcctctccagccttcacaaggaccgccggtggagccgctgg 1375
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1334 ACAAGGAGAACATCATGCGCCTCTCCAGCCTTCACAAGGACCGTCCTATAGAGCCTCTGG 1393
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1376 acctggccgtgttctgggtggagtttgtgatgaggcacaaagggcgccacacctgcgcc 1435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1394 ACCTGGCTGTTCTGGGTGGAATACGTGATGAGGCACAAGGGGGCACCACACCTGCGCC 1453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1436 ccgcagcccacgacctcacctggtaccagtaccattccttggacgtgattggtttcctct 1495
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1454 CGGCCGCCCATGACCTCACCTGGTATCAGTACCACTCCTTGGATGTGATTGGCTTCCTCC 1513
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1496 tggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccgga 1555
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1556 aatgettggggaaaaaagggegagttaagaaageecacaaaateeaagaeecattgagaag 1615
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1616 tgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaaca 1675
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1634 TGGGGGGAAGTGAAGGAGAAGTATTAGTTCATTATCTGATCAGTTGAAACTTGGA----- 1688
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1514 TGGCCATTGTGTTGACAGTGGTCTTCATTGTCTTTAAATGTTGTGCCCTATGGCTGCCGGA 1573
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1574 AATGCTTTGGGGGAAAGGGGCGAGTGAAGAATCACACAAATCCAAGACCCATTGAGAAG 1633
                                                  614 TACTCACAAGGCTTTCTGACCACATGGACTTCCTGCAAAGGGTCCAGAACATGCTGTACT 673
                                                                                                                                                      656 acttggaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctg 715
                                                                                                                                                                                                        674 ATCTGGTCCTGAAGTACATTTGCCGTTTATCAATCACTCCCTATGAAAGCCTGGCCTCTG 733
                                                                                                                                                                                                                                                           716 aaattotocaaacacctgttacggagtatgatototacagccacacatcaatttggttgt 775
                                                                                                                                                                                                                                                                                                                                                               776 tgcgaacggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattg 835
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      836 giggialicaacigccatcagggaaagccgiigcciaiggaaittgaagcciacattaaig 895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   854 GGGCCATAAACTGTGTTACCAAGAAGCCCCTCTCTCAGGAATTTGAAGCCTATGTCAACG 913
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        896 cttctggagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccag 955
                                                  δλ
                                                                                                 qq
                                                                                                                                                      δ
                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              OD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       οž
                                                                                                                                                                                                                                                           à
                                                                                                                                                                                                                                                                                                                                                               ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
```

```
AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       linear HTC 19-JAN-2002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutherla; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                       1373 tggacctggccgtgttctgggtggagtttgtgatgaggcacaagggcgccacacctgc 1432
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1433 gccccgcagcccacgacctcacctggtaccagtaccattccttggacgtgattggtttcc 1492
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1613 aagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaa 1672
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1673 acagaatcagtgttaaattcattttattcttattaaggaaatactttgcataaattaatc 1732
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1733 agccccagagtgctttaaaaaattctctta--aataaaaataatagactcgctagtcagt 1790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1791 aaagatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgcc 1850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1894 GAAGGTTCTAGTATATGTGATGTG-CTTTTCCAGTATCTTCAGTCTAGACAACTCTTGCC 1952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mus musculus adult male kidney cDNa, RIKEN full-length enriched library, clone:0610013P07:UDP-glucuronosyltransferase l family, member l, full insert sequence.
1073 taccccaaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggtt 1132
                                                                                               1133 cccatygigitttatgaaagcatatgcaatggcgittcccatggigatgatgccttgittg 1192
                                                                                                                       1240 CCCATSGTATTTATGAAGGAATATGCAATGGAGTTCCGATGGTGATGATGATGATGATGTTG 1299
                                                                                                                                                                                            1193 gigaicagaiggacaaigcaaagcgcaiggagaciaagggagciggagigaacccigaaig 1252
                                                                                                                                                                                                                                           1300 GCGATCAGATGGACAATGCCAAGCGCATGGAAACTCGGGGAGCTGGGGTGACCCTGAATG 1359
                                                                                                                                                                                                                                                                                        1253 ttctggaaatgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaa 1312
                                                                                                                                                                                                                                                                                                                                                                                           1313 gttacmaggagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgc 1372
                                                                                                                                                                                                                                                                                                                                                                                                                  1420 GCTACAAGGAGAACATCATGCGCCTCTCCAGCCTTCACAAGGACGTCCTATAGAGCCTC 1479
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1480 TGGACCTGGCTGTTCTGGGTGGAATACGTGATGAGGGGCACAAGGGGGGCACCACCTGC 1539
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1493 tettggeegtegtgetgaeagtggeetteateaeetttaaatgttgtgettatggetaee 1552
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1553 ggaaatgcttggggaaaaaagggcgagttaagaaagcccacaaaatccaagacccattgag 1612
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1660 GGAAATGCTTTGGGGGAAAGGGGCGAGTGAAGAAATCACAAAATCCAAAAGACCCATTGAG 1719
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1720 AAGTGGGGGAAGTGAAGGAGAAGTATTAGTTCATTATCTGATCAGTTGAAACTTGGA-- 1777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1834 CATTCAGCACATTTAAAATAATAATAATAATAAATAATTAACTTAATTGCTGGCCACACCCATCAGG 1893
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus (strain:C57BL/6J) adult male kidney cDNa to mRNA, clone_lib:RIKEN full-length enriched mouse cDNA library
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2202 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AK002629.1 GI:12832753
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HTC; CAP trapper.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              clone:0610013P07.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AK002629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AK002629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AK002629
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VERSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SOURCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                            ô
                                                                                                                                       g
                                                                                                                                                                                         ò
                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                        Š
                                                                                                                                                                                                                                                                                                                                                                                        ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
S. Adachi, J., Aizawa, K., Akahira, S., Akimura, T., Aono, H., Arai, A., Arakwa, T., Baldarelli, R., Bono, H., Brownstein, M., Bult, C., Carninci, P., Fukuda, S., Frkunishi, Y., Furuno, M., Hanagak, T., Hara, A., Hayaru, N., Hill, D., Hiramoto, K., Hiraoka, T., Hori, F., Hume, D., Imotani, K., Ishii, Y., Itoh, N., Izawa, M., Kasukawa, T., Kato, H., Kawai, J., Kojima, Y., Kouno, H., Kouda, M., Koya, S., Kurihara, C., Matsuyama, T., Miyazaki, A., Nishi, K., Omo, M., Okazaki, Y., Okido, T., Owa, C., Ouackenbush, J., Saito, R., Saito, R., Saito, R., Sano, H., Sasaki, D., Schriml, L., Shibata, K., Shibata, Y., Shinagawa, A., Shiraki, T., Tanaka, T., Yamanaka, T., Yamanaka, T., Yamanaka, T., Yamanaka, T., Yamanaka, J., Yasanishi, A., Yoshida, K., Yoshino, M., Muramatsu, M. and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Carningi, P., Shibata, Y., Hayatsu, N., Sugahara, Y., Shibata, K., Itoh, M., Konno, H., Okazaki, Y., Muramatsu, M. and Hayashizaki, Y. Normalization and subtraction of cap-trapper-selected cDNAs to prepare full-length cDNA libraries for rapid discovery of new genes Genome Res. 10 (10), 1617-1630 (2000)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
Submitted (10-JUL-2000) Yoshihide Hayashizaki, The Institute of
Submitted (10-JUL-2000) Yoshihide Hayashizaki, The Institute of
Physical and Chemical Research (RIKEN), Laboratory for Genome
Exploration Research Group, RIKEN Gemonic Sciences Center (6SC),
RIKEN Yokohama Institute; 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama,
Kanagawa 230-0045, Japan (E-mail:genome-res@gsc.riken.go.jp,
URL:http://genome.gsc.riken.go.jp/, Tel:81-45-503-9222,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shibata,K., Itoh,M., Aizawa,K., Nagaoka,S., Sasaki,N., Carninci,P., Konno,H., Akiyama,J., Nishi,K., Kitsunai,T., Tashinch,H., Itoh,M., Sumi,N., Ishi,Y., Makamuro,S., Hazama,M., Nishinc,T., Harada,A., Yamamotc,R., Matsumoto,H., Sakaguchi,S., Ikegami,T., Kashiwagi,K., Fujiwake,S., Inoue,K., Tagawa,M., Ohara,E., Watchiki,M., Yoneda,Y., Ishikawa,T., Ozawa,K., Tawa,M., Ohara,E., Watchiki,M., Okazaki,Y., Ishikawa,T., Ozawa,K., Tanaka,T., Matsuura,S., Kawai,J., Okazaki,Y., Muramatsu,M., Inoue,Y., Kira,A. and Hayashizaki,Y. sequencing pipeline with 384 multicapillary sequencer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      The RIKEN Genome Exploration Research Group Phase II Team and the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Please visit our web site (http://genome.gsc.riken.go.jp/) for further details.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Functional annotation of a full-length mouse cDNA collection
Nature 409, 685-690 (2001)
5 (bases 1 to 2202)
Carninci,P. and Hayashizaki,Y.
High-efficiency full-length cDNA cloning
Meth. Enzymol. 303, 19-44 (1999)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          FANTOM Consortium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     XhoI. Host: SOLR
                                                                                                                                                                                                                                                                                                                                                                                                                                                  (sites)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (sites)
                                                                                                                                             10349636
                                                                                                            99279253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AUTHORS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REFERENCE
                                                                               JOURNAL
                                                                                                                                                                                 REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOURNAL
                                                                                                            MEDLINE
                                                                                                                                             PUBMED
                                                                                                                                                                                                                                                                                                                                            JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PUBMEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         FEATURES
                                                                                                                                                                                                                                                                               TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TITLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMMENT
```

/strain="C57BL/6J

ŏ q ŏ q δλ g δ QQ ŏ

9

```
953 cagagaaagatatggcaattgctgatgctttgggcaaaatccctcagacagtcctgt 1012
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1013 ggcggtacactggaacccgaccatcgaatcttgcgaacaacaacaatacttgttaagtggc 1072
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1060 CGGAGAAGAAGCCATGGAAATTGCTGAGGCTTTGGGCAGAATTCCTCAGACGGTCCTGT 1119
                                                                                                                                                    56 gtgtgtgtgtctgctgacctgtggctttgccgaggcagggaagctactggtagtgccca 115
                                                                                                                                                                                                       163 GGTTTCTCTTCCTAGTGCTTGGGCCTCAGTTCTAGGTGACAAGCTGGTGGTGGTCCCCC 222
                                                                                                                                                                                                                                                                116 tggatgggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggc 175
                                                                                                                                                                                                                                                                                                                  223 AGGATGGAAGCCACTGGCTTAGCATGAAGGAGATAGTGGAACATCTCAGTGAACGAGGAC 282
                                                                                                                                                                                                                                                                                                                                                                        176 atgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgca 235
                                                                                                                                                                                                                                                                                                                                                                                                                             283 ATGACATTATGGTCCTAGTGCCAGAAGTCAATTTGCTTTTGGGAGAATCCAAATACTACA 342
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   236 cagigaagactiaticaacticatataccciggaggatciggaccgggagticaaggcti 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      343 GGAGGAAAATCTTCTCAGTTACCTACAGCCTAGAGGAACTACAGACCCGTTTTCGCACCT 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              296 ttgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcat 355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             583 CCTGTGGTGTGTGTCTGGCTGAGTAICTCAACCTGCCCTCTGTCTACCTCTTCAGAGGTT 642
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              403 TIGGAAACAACCACTITCTICCCAGIGCCGCCCTGAITGGICCTCTAAGAGAGIACAGGA 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      356 acaatgacatt---tttgacttattttttcaaattgcaggagtttgtttaaagacaaaa 412
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            463 ACAACATGATTGTCGTGGACATGTGCTTTTTCAGCTGCCAGAGCCTCCTGAAGGACTCTG 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 413 aattagtagaatacttaaaggaggttcttttgatgcagtgtttctcgatccttttgata 472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       523 CCACCCTCAGCTTCCTCAGGGAGAACAAGTTTGATGCTCTGTTCACAGACCCAGCCATGC 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             533 tactttgccactatcttgaagaaggtgcacagtgccctgctcctctttcctatgtcccca 592
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             643 TCCCATGCTCTCTGGAACACATGCTTGGTCAAAGCCCCAAGCCCTGTGTCCTACGTTCCCA 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   653 tgcacttggaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcct 712
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              763 ITAACATCTTGGAAAACTACCTATATTATTGTCTGTATTCAAAGTATGAAATCATTGCCT 822
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   713 ctgaaattctccaaacacctgttacggagtatgatctctacagccacacatcaatttggt 772
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      823 CAGACCTCCTCAAGAGAGATGTGTCCCTACCTTACA---CCAGAATTCTCTGTGGC 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    880 IGTTACGGTACGATTITGTGTTCGAATATCCCAGGCCAGTCATGCCCAACATGATCTTCA 939
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          833 ttggtggtatcaactgccatcagggaaagccgttgcctatggaatttgaagcctacatta 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     893 atgettetggagaacatggaattgtggttttetetttgggatcaatggteteagaaatte 952
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               773 tgitgogaacggactitgtittggactatcccaaacccgtgatgcccaacatgatctica 832
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               940 TIGGAGGGATCAACTGTAAGAAGGGAAAGCTGACTCAGGAATTTGAAGCCTATGTCA 999
                                                                                            0; Mismatches 599; Indels 16; Gaps
                                      34.0%; Score 789.6; DB 11; Length 2306; 66.6%; Pred. No. 1.1e-195;
                                                                 Best Local Similarity 66.6%;
                                                                                            Matches 1225; Conservative
                                         Ouery Match
                                                                                                                                                    δŏ
                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                        δy
                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov
Series: IRAK Plate: 18 Row: e Column: 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HTC 20-AUG-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /tissue_type="Mammary tumor. WAP-TGF alpha model. 7 months
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Email: egapbs-remail.nih.gov
Tissue Procurement: Lothar Hennighausen Ph.D., Robin Humphreys
Tissue Procurement: Lothar Hennighausen Ph.D., Robin Humphreys
CDNA Library Preparation: Life Technologies, Inc.
DNA Sequencing by: The I.M.A.G.E. Consortium (LINL)
DNA Sequencing by: Institute for Systems Blology
http://www.systemsbiology.org
contact: amadan@systemsbiology.org
Anup Madan, Rachel Dickhoff, Jessica Fahey, Stephanie Ford, Julia
Greene, Mark Ketteman and Anuradha Madan
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalla; Butheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Submitted (15-AUG-2001) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 801898 This clone has the following problem: incomplete processing. Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3ene Collection (MGC), Cancer Genomics Office, National Cancer
Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590,
                                                     2048 AAAIGGCAGTITIAAAICITAATCTITIGGCTTCTGCAGAIGGTTGCAATIGAICCTIAACC 2107
                                                                                                                                                                      2168 AGGGAAGCTITGTACCTITAGAGTGTAGATGAATGAATGAATGGATGGAGTGCACTGA 2227
                                                                                                                                                                                                                                                                                 2205 tgtatttgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaa 2264
                                                                                                                                                                                                                                                                                                                                                                                                                                               2288 IGTATITGAGAAGATAATCATIGCITATGTCAAAIGGAGCTGAATTTGATAAAAACCCAA 2347
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mus musculus, Similar to UDP-glucuronosyltransferase I family, member 1, clone IMAGE:3993384, mRNA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NIH-MGC Project URL: http://mgc.nci.nih.gov
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /note="Vector: pCMV-SPORT6"
559 c 528 g 625 t
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /clone_lib="NCI_CGAP_Mam5"
/lab_host="DH108"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /organism="Mus musculus"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2306 bp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /db_xref="taxon:10090"
/clone="IMAGE:3993384"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           gross tissue."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BC012716.1 GI:15215247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Contact: MGC help desk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (bases 1 to 2306)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Direct Submission
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 house mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                594 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             BC012716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 BC012716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DEFINITION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ORGANISM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          BASE COUNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACCESSION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOURNAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BC012716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      KEYWORDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REMARK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FEATURES
```

sonro	O)		
	/organism="Homo sapiens" /db_xref="taxon:9606"	q	6
	/clone="IMAGE:3854370" /fissue tvee="Colon. adenorarcinoma"	οy	6
	/Clone_lib="NIH_MGC_65"	Db 1	10.
TATION GOVE	9	0y 1	100
ORIGIN	מין של היים אינים	Dp 1	100
Č	70 28. Canada 1631 6. Br 11. Foresth 216	0у 1	100
St.	architecture (1975) Score 1031.0; DB 11; Deligin 2430; Store 1031.0; DB 11; Deligin 2430; Store 1000; Object	Db 1	11
ğ	1880; Conservative U; Mismaccnes 394; indeis Z; Gaps	0y 1	11
` ; }	4/ LCCCCCaldryldgryccgctgctgccgtggctrgccgaggcagggaggcagggaggtactgg lub 1.0	Dp 1	12(
	111C10CA0GGG1111C11AGCAC111GGGGCA1GG11G1AGG1GACAAGC1GCTGG	0y 1	11
OY 10/	lu, tagtgcccauggauggaagcaactggtcaccacgaggtcggtggggggagaaactcattc loo 	Dp 1	13
	trannoncestaannthottatantratnorananntaanttonraartonraanatran	0y 1	12
	でではなりなりないにしてはなりないとは、「一」	Db 1	133
		0у 1	13
	-sgaartgtaacgtgaagacttaattaacttaacacacggaggacttggagga 	Dp 7	13
	+++++++++++++++++++++++++++++++++++++++	0y 1	13
, e	26) tegaggeettigetegatyetaalgg-aaageacaagtaegaagtaeataeteete 344 358 archampeanangeanaanaarampeetaagtaeanaanaanaanaanaanaanaanaanaanaanaanaan	Db 1	14,
	ACCANICALITICARANCANICALITICATAGA (ANITALITA ANTAGA (ANITAGA (ANITAGA (ANITAGA (ANITAGA (ANITAGA (ANITAGA (ANI	0y	14
yo y	345 aatgggttcatacaatgacatttttgacttattttttcaaattgcaggagtttgttt	Dp 7	15
	פי מרמים מחוד מי בי	0у	14
à à	4.03 digicadadadalLagiagaaldaCttadaggaggtCCttttgatgCaglgCttCtCtCgatCC 404 4.08 C72C3A7A7CCAAACCCAACAAAAAAAAAAAAAAAAAAAA	qq	15
	GGACAGGGACACCCI GAACIICII I AAGGAGAGCAAGIIIGAI GCICIII I ICACAGACCC	Oy 1	15
y	465 ttttgataactgtggcttaattgttgccaaatatttctccctcc	QQ	16
		0y	16
		qq	16
	CAGGGGTTTTCCGTGTTCCCTGGAGCATACATTCAGCAGAAGCCCCAGACCCTGTGTGTCCTA	Oy.	16
r v	585 Igreceagaartetettagggtteteagatgeeargaetteaaggagagagagagagaa 644 	qa	17
	CT1.**CCCTCTCTCTCTCTCTT.1.1.**CTCTCTT.CTCTT.T.1.1.1.CCCCTTCTT.CTCTT.CTCTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTT.CTCTTTTT.CTCTTTTTT	0y	11
	CTTCCTTGTTAATTGTTGGTGCCCCTATCTATTTTATTGTCTGTTTTTCAAAGTATGAAGAAGAAGAAGAA	qa	18
	01101101111011111011110111101111101111101111	νδ	17
· · ·	aaragueeeegaaareeeegaaaaeeeegeegagagaagaaceeeaeagacaacaaae 	qq	18
	aatttaattattacaacaaactttatttaactatccaaccataata	oy .	18
	TGTT:GGCTGTTAAGATATGACTTTGTGCTTGAATATCCTAGGCCGGTCATGCCAACAT	qq	13
0y 8		δλ	19
			19
Qy 8	885 ctacattaatgcttctggagaacatggaattgtggttttcctttgggatcaatggtctc 944	δδ	19

```
665 acttgaaaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcata 1724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             845 tgtgccattittcagaggacgtgcagacaggctggcattctagattactttcttactct 1904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 905 gaaacatggcctgtttgggagtgcgggattcaaaggtggtccaccgctgcctactgc 1964
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       988 GAAACATGGCCTGTTTGGGAGTGCGGGATTCAAAGGTGGTCCCACCGCTGCCCTACTGC 2047
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         965 aaatggcag:tttaatcttatcttttggcttctgcagatggttgcaattgatccttaacc 2024
                                                                                                                                                                                                                               365 ggagccgctggacctggccgtgttctgggtggagttgttgtgatgaggcacaagggcgcc 1424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         545 tggctaccggaaatgcttggggaaaaagggcgagttaagaaagcccacaaatccaagac 1604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     748 ACTIGAAAACAGAATCAGGTGTTAAATTCATTTTATTTATTAAGGAAATACTTTGCATA 1807
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     725 aattaatcayccccagagtgctttaaaaaattctcttaaataaaaataatagactcgcta 1784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             785 gtcagtaaaqatatttgaatatgtatcgtgcccctccggtgtctttgatcaggatgaca 1844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           868 GTCAGTAAAGATATTTGAATATGTATCGTGCCCCTCCGGTGTCTTTGATCAGGATGACA 1927
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               928 TGTGCCATTTTTCAGAGGACGTGCAGACAGGCTGGCATTCTAGATTACTTTTCTTACTCT 1987
                                                                                                                                                                 328 AGAAATTCCAGAGAAGAAGCTATGGCAATTGCTGATGCTTTGGGCAAAATCCCTCAGAC 1087
                                                                                                                                                                                                                                                                                                                                                                   124 taagtggctacccaaaacgatctgcttggtcacccgatgacccgtgcctttatcaccca 1124
                                                                                                                                                                                                                                                                                                                                                                                                                          148 TAAGTGGCTACCCCAAAACGATCTGCTTGGTCACCCGATGACCCGTGCCTTTATCACCCA 1207
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125 tgctggttcccatggtgtttatgaaagcatatgcaatggcgttcccatggtgatgatgc 1184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      208 IGCIGGITCCCAIGGIGITIAIGAAAGCAIAIGCAAIGGCGITCCCAIGGIGAIGAIGC 1267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        185 cttgtttggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtgac 1244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                245 cctgaatgtictggaaatgactictgaagatitagaaaatgcictaaaagcagcoatcaa 1304
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      328 CCTGAATGTJCTGGAAATGACTTCTGAAGATTTAGAAAATGCTCTAAAAGCAGTCATCAA 1387
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                305 tgacaaaagt.tacaaggagaacatcatgcgcctctccagccttcacaaggaccgcccggt 1364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  448 GGAGCCGCTCGACCTGGCCGTGTTCTGGGTGTTTGTGATGAGGCACAAGGGCGCGCC 1507
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    125 acacctgcgccccgcagcccacgacctcacctggtaccagtaccattccttggacgtgat 1484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        485 tggtttcctcttggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgctta 1544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           628 TGGCTACCGGAAATGCTTGGGGAAAAAGGGCGAGTTAAGAAAGCCCACAAATCCAAGAC 1687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             605 ccattgaga&gtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaa 1664
                             968 CTACATTAAIGCTTCTGGAGAACATGGAATTGTGGTTTTCTCTTTGGGATCAAIGGTCTC 1027
                                                                                                   945 agaaattccagagaagaaagctatggcaattgctgatgctttgggcaaaatccctcagac 1004
```

```
August 21, 2002, 09:38:48; Search time 4821.79, Seconds (without alignments) 6494.048 Million cell updates/sec
                                                                                                                                                                                                                                                             1 ctcagctgcagttctctgat.....ttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                      27472414
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                       13736207 seqs, 6748477542 residues
                                                                                                                                                                                                                                                                                                                                                                                                          Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                  OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                     IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Minimum DB seq length: 0 Maximum DB seq length: 2000000000
                                                                                                                                                                                                                   US-09-835-082-3
                                                                                                                                                                                                                                      Perfect score:
                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                       Searched:
                                                                                                                                                                                                                                                               Sednence:
                                                                                                                              Run on:
                                                                                                                                                                                                                   Title:
```

em_gss_hum:* em_gss_inv:* em_gss_pln:* em_gss_vrt:* em_estba:*
em_esthum:*
em_estin:*
em_estin:* em_estpl:* em_estro:* em_htc:* em_estov:* gb_est2:* gb_est1:* gb_htc:* dp_gss:* EST:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		Description	BC011409 Homo sapi	BC012716 Mus musch	AK002629 Mus muscu	BG402908 602418710	BG291462 602387347	BI759297 603042939	BI762347 603049004	AI307269 tb24d12.x	BG289777 602385071	BE870911 601448862	BG747143 602704364	AI831562 w139b01.x	BG424452 602447772	BG469506 602532818	BG400591 602464244	AI765716 wi83f06.x	AV652040 AV652040
SUMMARIES		er er	BC011409	BC012716	AK002629	BG402908	BG291462	BI759297	BI762347	AI307269	BG289777	BE870911	BG747143	AI831562	BG424452	BG469506	BG400591	AI765716	AV652040
		<u>۾</u>	11	11	Ξ	10	10	10	10	6	10	10	10	6	10	10	10	σ	6
	* Ouery	Length	2450	2306	2202	868	882	876	884	818	881	1005	697	764	723	829	833	791	658
	& Query	Match	70.3	34.0	33,6	31.9	31.1	31.1	30.5	30.0	30.0	29.3	29.3	28.9	27.8	27.6	27.6	27.6	27.4
	,	Score	1631.6	789.6	780.2	741.2	722.4	720.8	707.4	695.8	695.4	9.089	679.2	669.4	644	641.2	640	639.8	636.8
	Result	NO.	1	7	m	4	2	9	7	ထ	6	10	11	c 12	13	14	15	c 16	17

BG167885 602339857	BF031444 601559244	BG286763 602382611	BG432363 602496688	AI829268 wk58a10.x	AV692287 AV692287	BG399019 602440878	AV646537 AV646537	BE249993 600943171	AI635995 wal4e12.x		BG401258 602465359	AW151709 xf68b10.x	AW051715 wx27q08.x	BG291839 602386068	AI767470 wh27a05.x	BE379923 601159412		BG386668 602454928	BG433491 602497921	AW300312 xS59f05.x	BG401340 602465455	BF130433 601818721	AW469219 hc79e05.x	BG328092 602427143	BF234991 602027544	AW082933 xc04f05.x	BF027719 601764020	
10 BG167885	10 BF031444		10 BG432363		Ø		9 AV646537					_	-		7	·10 BE379923		10 BG386668	10 BG433491	Ø		10 BF130433	Æ,	10 BG328092	10 BF234991	9 AW082933	10 BF027719	
945																581										626	999	
27.4	27.0	26.8	26.7	26.1	25.9	25.7	25.6	25.5	25.4	25.3	25.2	25.2	25.1	25.1	24.7	24.5	24.4	24.0	24.0	23.7	23.7	23.4	23.4	23.4	23.1	23.1	22.9	
635.4	625.6	621.8	618.8	604.8	601	296	594.2	592.4	589.8	588	584.8	584	583	583	572	567.4	267	557.8	556.4	550.6	549.8	543.8	542.8	542.8	537	535.4	532.2	
18	19	20	21	22	23	24	25	56	27	28	59	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	
				υ					υ	υ		D	D		υ					υ			υ			ບ		

ALIGNMENTS

RESULT 1 2001409 2001409 CCESSION CCESSION CEFERENCE CORGANISM CORGANISM TITLE JOURNAL REMARK COMMENT	BC011409 Lomo sapiens, clone IMAGE:3854370, MRNA. linear HTC 30-JUL-2001 BC011409.1 GI:15030273 HTC. HTC. HTC. HTC. HTC. HTC. HTC. HTC.	Homo saptens Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml; Mammalia: Eutheria; Primates; Catarrhin1; Hominidae; Homo. 1 (bases 1 to 2450) Stransberg, R. Direct Submission Submitted (25-JUL-2001) National Institutes of Health, Mammalian Gene Collection (MGC), Cancer Genomics Office, National Cancer Institute, 31 Center Drive, Room 11A03, Bethesda, MD 20892-2590, USA	NIH-MGC Project URL: http://mgc.nci.nih.gov Contact: MGC help deek Emall: cgapbs-rémai.nih.gov Tissue Procurement: ATC CDNA Library Preparation: Life Technologies, Inc. CDNA Library Arrayed by: The I.M.A.G.E. Consortium (LLNL) DNA Sequencing by: Baylor College of Medicine Human Genome Sequencing Center Center code: BCM-HGC Web site: http://www.hgsc.bcm.tmc.edu/cdna/ Contact: villalon@bcm.tmc.edu. Villalon, D.K., Luna, R.A., Hale, S.M., Hulyk, S., Lu, X., Garcia, M., Holloway, M., Felford, B., Hodgson, A., Bouck, J., Yu, W., Muzny,D.M., Gibbs,R.A.	Clone distribution: MGC clone distribution information can be found through the I.M.A.G.E. Consortium/LLNL at: http://image.llnl.gov Series: IRAK Plate: 13 Row: b Column: 4 This clone was selected for full length sequencing because it passed the following selection criteria: matched mRNA gi: 4507814 This clone has the following problem: incomplete processing. Location/Qualifiers
E E	RESULT 1 EC011409 LOCUS DEFINITION ACCESTON VERSION KEYWORDS SOURCE	OKGANISM REFERENCE AUTHORS TITLE JOURNAL	REMARK COMMENT	FEATURES

us-09-835-082-3.rni

1128 tggttcccatggtgtttatgaaagcatatgcaatggcgttcccatggtgatgatgccctt 1187

APPLICANT: OWENS, IDA S.
APPLICANT: TITER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
NUMBER OF SEQUENCES: 40
CORRESPONDENCE ADDRESS:

Sequence 37, Application PC/TUS9200282 GENERAL INFORMATION:

PCT-US92-00282-37

ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1615 L STREET, N.W. CITY: WASHINGTON

E: Floppy disk The PC compatible SYSTEM PC compatible PatentIn Release #1.0, Version #1.25

OPERATING SYSTEM:

ZIP: 20036-5601
COMPUTER READABLE FORM:
MEDIUM TYPE: Flow.

PCT/US92/00282

91532-PCT

26581

CLASSIFICATION: 435 ATTORNEY/AGENT INFORMATION: CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCI
FILING DATE: 19920110

NAME: SCOTT, WATSON T

REFERENCE/DOCKET NUMBER: 9153
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEFAX: 202-822-0944
TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 37:

SEQUENCE CHARACTERISTICS: LENGTH: 51 base pairs

single

STRANDEDNESS:

linear

TOPOLOGY:

; MOLECULE TYPE: CDNA PCT-US92-00282-37

NUCLEIC ACID

```
APPLICANT: BELKNAP, WILLIAM R
TITLE OF INVENTION: DNA SEQUENCES ENCODING SOLANIDINE
TITLE OF INVENTION: UDP-GLUCOSE GLUCOSYLTRANSFERASE AND USE TO REDUCE
TITLE OF INVENTION: GLYCOALKALOIDS IN SOLANACEOUS PLANTS
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cloning and expression of solanidine UDP-glucose glucosyltransferase from potato .. The Plant Journal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; RELEVANT RESIDUES IN SEQ ID NO: 1: FROM 1 TO 488 US-08-797-226-1
                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: APPLICATION NUMBER: US/08/797,226
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LOCATION: 20.1486
OTHER INFORMATION: /product= "solanidine
OTHER INFORMATION: glucosyltransferase"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DEVELOPMENTAL STAGE: mature, somatic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            : lambda gtll cDNA library
SGT 1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0011.97
                                                                                                                                                                                                                                                                                    E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSAFACALALOW: JOAN ATTORNEY JARSONS, NANCY JANAMES: PARSONS, NANCY JANAMES: 0011.

TREEPROMED: (510) 559-5731
TREEPROMED: (510) 559-5771
INFORMATION FOR SEQ ID NO: 1: SEQUENCE CHARACTERISTICS:
LENGTH: 1607 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PUBLICATION INFORMATION:
AUTHORS: Mochs, Charles P.
AUTHORS: Allen, Paul V.
AUTHORS: Friedman, Wendel
AUTHORS: Belknap, William R.
                                                                                                                                E: NANCY J. PARSONS
800 BUCHANAN ST.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN: cv. Lemhi Russet
INDIVIDUAL ISOLATE: SGT1750
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Solanum tuberosum
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: linear MOLECULE TYPE: CDNA to mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nucleic acid
EDNESS: single
                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     tuber
                                                                                                                                                                                                                                                                                                                                 OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    IMMEDIATE SOURCE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NAME/KEY: CDS
                                                                                                                                                                             ALBANY
                                                                                                                                                                                                                        USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ORIGINAL SOURCE
                                                                                                                                                                                                                                                                                    MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                         FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HYPOTHETICAL:
                                                                                                                                                                                                                                           94710
                                                                                                                                  ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ORGANISM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOURNAL:
                                                                                                                                                        STREET:
                                                                                                                                                                                                                        COUNTRY:
```

```
Search completed: August 21, 2002, 11:59:49 Job time: 32837 sec
```

Qy 1068 gtggctaccccaaaacgatctggttggtcacccgatgacccgtgcctttatcacccatgc 1127 Db 1069 GIGGCICCCACAGCITACGAICATGGAACAITCAGCAACAGCGGGGITCAIGACTCATG 1128

Query Match 1.9%; Score 44.8; DB 2; Length 1607; Best Local Similarity 53.4%; Pred. No. 0.0072; Matches 94; Conservative 0; Mismatches 82; Indels 0;

.; 0

Gaps

1.9%; Score 43.6; DB 5; Length 51; 92.0%; Pred. No. 0.0021; tive 0; Mismatches 4; Indels

Local Similarity 92.09 nes 46; Conservative

Query Match

```
APPLICATION NUMBER: US/08/522,421
FILING DATE: 11-JAN-1996
CLASSIFICATION: 800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ALLEN, PAUL V
ROCKHOLD, DAVID R
STAPLETON, ANDREW
GARBARINO, JOAN E
FRIEDMAN, MENDEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   GENERAL INFORMATION:
APPLICANT: MOEHS, CHARLES P
                                                                                                                                                                                                                                                                                                 FILING DATE: 22-MAR-1993 PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                      FILING DATE: 22-MAR-1
PRIOR APPLICATION DATA:
                                                               APPLICATION DATA:
                                                                                                          FILING DATE: 22-MAR-
                                                                                                                                                                                                                                                                                                                                                                FILING DATE: 22-MAR-
PRIOR APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER:
                                                                                                                                                                                                                                                                               APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ORGANISM: ERT1B
                                             CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-522-421-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-797-226-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        873 ggaatttgaagcctacattaatgcttctggagaacatggaattgtggttttctctttggg 932
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 5.8%; Score 135; DB 5; Length 513; Best Local Similarity 100.0%; Pred. No. 4.2e-29; Matches 135; Conservative 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: ADU-Bakar, Umi Kalsom
APPLICANT: Barton, Sarah Louise
APPLICANT: Barton, Sarah Louise
APPLICANT: Galego-Veigas, Pedro Pablo
APPLICANT: Gray, Julie Elizabeth
APPLICANT: Grierson, Donald
APPLICANT: Lowe, Alexandra Louise
APPLICANT: Picton, Steve
APPLICANT: Whotton, Lee Colin
TITLE OF INVENTION: DAN, DNA, CONSTRUCTS, CELLS AND PLANTS
TITLE OF INVENTION: DERIVED THEREFROM
                                                                               SOTTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pillsbury Madison & Sutro, L.L.P.
                                                                                                                                                                                                                                                          91532-PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1100 New York Avenue, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                        COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                CLASSIFICATION: 455
ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 26581
REFERENCE/DOCKET NUMBER: 91537
FELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEFAX: 202-822-0944
TELEX: 6714627 CGBH
TELEX: 6714627 CGBH
INFORMATION FOR SEO ID NO: SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; Sequence 1, Application US/08522421
; Patent No. 5908973
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Microsoft Word CURRENT APPLICATION DATA:
                           Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH: 513 base pairs
TYPE: NUCLEIC ACID
STRANDEDNESS: single
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           993 aatccctcagacagt 1007
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    350 AATCCCTCAGACAGT 364
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        COUNTRY: USA
ZIP: 20005-3918
COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQUENCES: 1. CORRESPONDENCE ADDRESS:
    COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STREET: 1100
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  GENERAL INFORMATION:
                        MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT-US92-00282-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-522-421-1
```

ò

ò

```
1059 acttgttaagtggctaccccaaaacgatctgcttggtcacccgatgacccgtgcctttat 1118
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 965 AATAGTGAAATGGGCACCACAAAAACAGGTGCTTGCACATCCCGCGGTAGCAGGTTTTT 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1119 cacccatgctggttcccatggtgtttatgaaagcatatgcaatggcgttcccatggtgat 1178
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1025 CACTCATTGTGGTTGGAATTCTACGCTTGAAAGTATATGTGAAAGAAGTCCTATGGTGGTGGTGGTGGAATTCTACGCTTGAAAGTATATGTGAAAGAAGTACTATGCTAGAAGTGTG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 2.4%; Score 54.6; DB 2; Length 1669; Best Local Similarity 59.2%; Pred. No. 1.1e-05; Matches 93; Conservative 0; Mismatches 64; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1179 gatgcccttgtttggtgatcagatggacaatgcaaag 1215
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1085 CAGGCCATTTCTAGCAGACCAACTGGTGAACGCAAGG 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: A. C. T. PRIOR APPLICATION DATA:
PRIOR APPLICATION NUMBER: 68 9320988.0
FILING DATE: 12-OCT-1993
INFORMATION FOR SEQ ID NO: 1:
SEQUENCE CHARACTERISTICS:
LENGTH: 1669 Dase pairs
TYPE: nucleic acid
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FILING DATE: 22-MAR-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 6B 9305860.0
FILING DATE: 22-MAR-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 22-MAR-1993
PRIOR APPLICATION DATA:
FILING DATE: 22-MAR-1993
APPLICATION NUMBER: 6B 9314351.9.
FILING DATE: 12-JUL-1993
APPLICATION NUMBER: GB 9305868.3 FILING DATE: 22-MAR-1993
                                                                                     APPLICATION NUMBER: GB 9305869.1 FILING DATE: 22-MAR-1993 PRIOR APPLICATION DATA:
                                                                                                                                                                                  APPLICATION NUMBER: GB 9305859.2 FILING DATE: 22-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                    UMBER: GB 9305866.7
22-MAR-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: GB 9305867.5
FILING DATE: 22-MAR-1993
                                                                                                                                                                                                                                                                              GB 9305865.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence 1, Application US/08797226
Patent No. 5959180
```

임

ò

g õ

õ

```
965 CTCTGTTTGGCTGTTAAGATATGACTTTGTGCTTGAATATCCTAGGCCGGTCATGCCCAA 1024
                           107 tagtgcccatggatgggagccactggttcaccatgaggtcggtggtggagaaactcattc 166
                                                                                                                                                                                                                                                                                                                                                                                                          287 tcaaggcttf.tgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaa 346
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 403 aaagacaaaaaattagtagaatacttaaaggagagttettttgatgeagtgtttetegat 462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              47 ttcctctatctgtgtgtctgctgctgacctgtggctttgccgaggcagggaagctactgg 106
                                                                                                                                                   305 IGGTCCCTCAGGACGGAAGCCACTGGCTTAGTATGAAGGATATAGTTGAGGTTCTCAGTG 364
                                                                                                                                                                                                     167 tcagggggcatgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcac 226
                                                                                                                                                                                                                                                                                                      227 tgaattgcacagtgaagacttattcaacttcatataccctggaggatctggaccgggagt 286
                                                                                                                                                                                                                                                                                                                                                        425 AATACTACACAAGAAAATCTATCCAGTGCCGTATGACCAAGAAGAGCTGAAGAACCGTT 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                           485 ACCAATCATTTGGAAACAATCACTTTGCTGAGCGATCATTCCTAACTGCTCCTCAGACAG 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             347 tgggttcatacaatgacatt····tttgacttattttttttcaaattgcaggagtttgttt 402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            545 AGTACAGGAATAACATGATTGTTATTGGCCTGATACTTCATCAACTGCCAGAGCCTCCTG 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   605 CAGGACAGGGACACCCTGAACTICTTTAAGGAGGAGGAGTTTGATGCTCTTTTCACAGAC 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     463 cettitgatmactgiggettaattgitgecaaatattteteeeteeetegtggiette 522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         523 gocaggggaatactttgccactatcttgaagaaggtgcacagtgccctgctccttttcc 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        725 TCAGGGGTTTTCCGTGTTCCCTGGAGCATACATTCAGCAGAAGCCCAGACCCTGTGTCTC 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          785 ACATTCCCCNGGTGCTACACAAGTTTTCAGACCACATGACTTTTTCCCAACGAGTGGCC 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           643 aaccacatcatgcacttggaggaacatttattatgccaccgttttttcaaaaatgcccta 702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           845 AACTICCTICTIAATTIGIIGGAGCCCIAICIAITITAIIGICIGIITICAAAGIAIGAA 904
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               703 gaaatagccictgaaattctccaaacacctgtt-acggagtatgatctctacagccacac 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                762 atcaatttgqttgttgcgaacggactttgttttggactatcccaaacccgtgatgcccaa 821
                                                                                                                                                                                                                                                    365 ACCGGGGTCATGAGATTGTAGTGGTGGTGCCTGAAGTTAATTTGCTTTTGAAAGAATCCA 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    665 CCAGCCTTACCCTGTGGGGTGATCCTGGCGAGTATTTGGGCCTACCATCTGTGTACCTCT 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGII AND A MUTATION
TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                822 catgatcttcattggtggtatcaactgccatcagggaaagccgt 865
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CUSHMAN DARBY & CUSHMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 20, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET: 1615 L STREET, N.W. CITY: WASHINGTON STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US92-00282-20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            COUNTRY:
                                                                                                 ò
                                                                                                                                                g
                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                          Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                           염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ο
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             염
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Б
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                                                                             963 TGTGGATCTTGTCAGCTATGCATCCGTGTGGCTTTCCGAGGGGACTTTGTGATGGACT 1022
                                               680 accgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttacgg 739
                                                                                                                                                                                                                                                      903 ATACTITITCTGCCCCTIATGCAAGTCTTGCCCCTGAGCTTTTTCAGAGAGAGGTGTCAG 962
                                                                                                                                                                                                                                                                                                                            740 agtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttggact 799
                      560 cacagigocotgotoctotitociaigococagaaitototiagggitotoagaigoca 619
                                                                                                                       620 tgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatgcc 679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                      843 TGACATTCCTGCAAAGGGTCAAGAACATGCTCTACCTTGGCCCTGTCCTACATTTGCC 902
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       / Match 6.2%; Score 143.6; DB 5; Length 1219; Local Similarity 50.8%; Pred. No. 2.3e-31; nes 419; Conservative 0; Mismatches 399; Indels 6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 8, Application PC/TUS9200282
GENERAL INFORMATION:
APPLICANT: OMENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGII AND A MUTATION
TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Patentin Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JMBER: PCT/US92/00282
19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 9153:
TELECOMMUNICATION INFORMATION:
TELEPRION INFORMATION:
TELEFAX: 202-822-0944
TELEFAX: 202-822-0944
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1083 AGCCACTATCTCAGGTCTGT 1102
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      860 agccgttgcctatggaattt 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1219 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 419; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NAME: SCOTT, WATSON T
REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: NUCLEIC ACID
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         COUNTRY: U.S.A.
ZIP: 20036-5601
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 11
PCT-US92-00282-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PCT-US92-00282-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
```

20036-5601

```
Matches 421; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NUCLEIC ACID
EDNESS: single
                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MOLECULE TYPE: CDNA
                        TITLE OF INVENTION:
                                                                                                                                        WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           linear
                                                                                                                                                                             RY: U.S.A.
20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRANDEDNESS:
                                                                                                                                                                                                                                       MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US92-00282-12
        APPLICANT:
                                                                                                                     STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         음
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  140 TGCTGGGCCCAGTGGTGCCCATGCTGGGAAGATACTGTTGATCCCAGTGGCAGCC 199
                                                                                                                                                                                                                                                                                                                 200 ACTGGCTGAGCATGCTTGGGGCCATCCAGCAGCTGCAGAGGGGACATGAATAGTTG 259
                                                                                                                                                                                                                                                                                                                                                                 188 tagicaigccagaggigagitggcaacigggaagaicacigaaiigcacagigaagacii 247
                                                                                                                                                                                                                                                                                                                                                                                                    260 TCCTAGCACCTGACGCCTCGTTGTACATCAGGAGGAGCATTTTACACCTTGAAGACGT 319
                                                                                                                                                                                                                                                                                                                                                                                                                                         248 attcaacttcatataccctggaggatctggaccgggagtt--caaggcttttgcccatgc 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              320 ACCCTGTGCCAATCCAAAGGGAGGATGTGAAAGAGTCTTTTGTTAGTCTCGGGCATAATG 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     306 tcaatggaaagcacaagtacgaagtatattattctctattaatgggttcatacaatgacat 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        380 TITITGAGAATGATTCTTCCTGCAGCGTGTGATCAAAACATACAAGAAAATAAAAAAGG 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                366 ttttgact-tatttttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   440 ACTCTGCTATGCTTTTGTCTGGCTGTTCCCACTTACTGCACAACAAGGAGCTCATGGCCT 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               485 tigitgocaaatatticcectecetegiggtettegeeaggggaatactitgeeac 544
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     620 IGGAATITGAGGCTACCAGGCCCCAACCCATTTCTCCTACGTGCCCAGGCCTCTCTCCT 679
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    740 AGAACTITCIGIGGACGIGGITIAITCCCCGIAIGCAACCCIIGCCICAGAATTCCTIC 799
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              128 actggttcaccatgaggtcggtggtggagaactcattctcagggggcatgaggtggttg 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          425 acttaaaaggagagttcttttgatgcagtgtttctcgatccttttgataactgtggcttaa 484
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           545 atcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctcttag 604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   605 ggitcicagaigccaigactitcaaggagagagiacggaaccacaicaigcaciiggagg 664
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        680 CTCATTCAGATCACATGACCTTCCTGCAGCGGGTGAAGAACATGCTCATTGCCTTTTCAC 739
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             665 aacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                             Gaps
                                                                                                                                                                           3;
                                                                                                                                  Query Match 7.0%; Score 161.8; DB 5; Length 1190; Best Local Similarity 51.8%; Pred. No. 1.3e-36; Matches 414; Conservative 0; Mismatches 382; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 12, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              845 actgccatcagggaaagcc 863
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 920 ACTGCCTTCACCAAATCC 938
TYPE: NUCLEIC ACID
STRANDEDNESS: single
                                         TOPOLOGY: linear MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US92-00282-12
                                                                            PCT-US92-00282-18
                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                       qq
                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                           δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

APPLICANT: OWENS, IDA S.

```
484 CCCAGAAGGAATTTGATCGCGTTACGCTGGGCTACACCTCAAGGGTTCTTTGAAACAGAAC 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    85 gccgaggcagggaagctactggtagtgcccatggatgggagccactgg--ttcaccatga 142
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 364 GGAGGCCTTGCGGGAGCTCCATGCCAGAGGCCACCAGGCGGTGGTCCTCACCCCAGAGG 423
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       203 tgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcatata 262
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          424 TGAATATGCCACATCAAAGAAGAAAATTTTTCACCCTGACAGCCTATGCTGTTCCATGGA 483
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                263 ccctggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagcac 319
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     320 aagtacgaagtatattctctattaatgggttcatacaatgacatttttgacttatttt 379
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           380 tttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagagtt 439
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            440 cttttgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaatatt 499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              304 GCTGAGAGGGAAAGGTGTTGGTGGTGCCCCACTGATGGCAGCCCCTGGTCTCAGTCATGC 363
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  143 ggtcggtggtggagaaactcattctcagggggcatgaggtggttgtagtcatgccagagg 202
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    544 ATCTTCTGAAGAGATATTCTAGAAGTATGGCAATTATGAACAATGTATCTTTGGCCCCTTC 603
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             604 ATAGGTGTTGTGTGGAGCTACTGCATAATGAGGCCCTGATCAGGCACCTGAATGCTACTT 663
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               500 tetecetecetecgtggtettegecaggggaataetttgecaetatettgaagaaggtg 559
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 6; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6.9%; Score 161.2; DB 5; Length 1197; 52.6%; Pred. No. 2e-36; tive 0; Mismatches 373; Indels 6;
RITTER, JOSEPH K.
IVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
IVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                      ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              91532-PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                             COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REFERENCE/DOCKET NUMBER: 91
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TELEFAX: 202-822-0944
TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 12:
                                                                                                                                                                                                                                                                                                                                                                                                                       Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
LENGTH: 1197 base pairs
```

ò g

œ

```
202 CTGGGCTGAGAGTGGAAAGGTGTTGGTGGTGCCCATTCATGGCAGCCACTGGCTCAGCAT 261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 141 gaggtcggtggtggagaactcattctcagggggcatgaggtggttgtagtcatgccaga 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                262 GCGGGAGGTCTTGCGGGAGCTCCATGCCAGGCCACCAGGCAGTGGTCCTCACCCCAGA 321
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        201 ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    322 GGTGAATATGCACATCAAAGAAGAACTTTTTCACCCTGACAACCTATGCCATTTCGTG 381
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         261 taccetggaggatetggacegggagtteaaggettttgeeeatgeteat---ggaaage 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           382 GACCCAGGATGAATTTGATCGCCATGTGCTGGGCCACACTCAACTGTACTTTGAAACAGA 441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             318 acaactacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ouery Match 7.9%; Score 183.6; DB 5; Length 1066; Best Local Similarity 53.5%; Pred. No. 6.7e-43; Matches 429; Conservative 0; Mismatches 369; Indels 4;
                                                                                                                                                                                                                              APPLICANT: OWENS, IDA S. APPLICANT: RITTER, JOSEPH K. TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT AFPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                        CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                            Sequence 14, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEFAX: 202-822-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 2658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REFERENCE/DOCKET NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               : 1066 base pairs
NUCLEIC ACID
                                               957 GAAGCCACTATCTCAGG 973
858 aaagccgttgcctatgg 874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                    NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                     WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Y: U.S.A. 20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE:
                                                                                                                               SULT 8
F-US92-00282-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US92-00282-14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
```

ò g ò g ð Q

```
498 tttctccctccctcgtggtcttcgccaggggaatactttgccactatcttgaagaagg 557
378 tttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagag 437
                                             502 TCATAGGTCTTGTGTGGAGCTACTACATAATGAGGCCCTGATCAGGCACCTGAATGCTAC 561
                                                                                                 438 ttcttttga:gcagtgtttctcgatccttttgataactgtggcttaattgttgccaaata 497
                                                                                                                            558 tgcacagtg:cctgctcctctttcctatgtccccagaattctcttagggttctcagatgc 617
                                                                                                                                                                                                                                                                                                                            618 catgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 678 ccaccgttt:ttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   738 ggagtatga:ctctacagccacacatcaatttggttgttgcgaacggactttgttttgga 797
                                                                                                                                                                                                                                                                                                                                                                                                                                              742 CATGACATTCATGCAAAGGGTCAAGAACATGCTCTACCCTCTGGCCCTGTCCTACATTTG 801
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               802 CCATGCTTT/ITCTGCTCCTTATGCCAGCCTTGCCTCTGAGCTTTTTCAGAGAGGTGTC 861
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 862 AGTGGTGGATATTCTCAGTCATGCATCTGTGTGGCTGTTCCGAGGGGACTTTGTGATGGA 921
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSSEH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E: CUSHMAN DARBY & CUSHMAN 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 18, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   981 GAAGCCACTATCTCAGGTCTGT 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     858 aaagccgttycctatggaattt 879
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IBM PC compatible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 91
TELECOMNUNICATION:
TELEPHONE: 202-861-3000
TELEFAX: 202-862-0944
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 18:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1190 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REGISTRATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    U. S. A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FILING DATE: 1 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PCT-US92-00282-18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     COMPUTER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                                                                                                            g
                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                           g
```

```
303 GGTGAATATGTACATCAAAGAAGAACTTTTTCACCCTGACAACGTATGCCATTTCATG 362
                                                    261 taccctggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagc 317
                                                                                                            363 GACCCAGGACGAATTTGATCGCCTTTTGCTGGGTCACACTCAATCGTTCTTTGAAACAGA 422
                                                                                                                                                                   318 acaagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                     378 tttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagag 437
                                                                                                                                                                                                                                                                                                                                          483 ACATAGGICITGTGTGGAGCTACTGCATAATGAGGCCCTGATCAGGCACCTGCATGCTAC 542
                                                                                                                                                                                                                                                                                                                                                                                                  438 ttcttttgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaata 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                             543 TICCTITGAIGIGITCTAACAGACCCCTTTCACCTCTGCGCGGCGGCGGCTGCTAAGIA 602
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       498 tttctccctccctccgtggtcttcgccaggggaatactttgccactatcttgaagaagg 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            603 CCTGTCGATTCCTGCTGTTTTTTTTTTTGAGGAACATTCCATGTGATTTAGACTTTAAGGG 662
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    558 tycacaytyccctyctcctcttcctatytccccayaattctcttaygyttctcayatyc 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           663 CACACAGTGTCCAAACCCTTCCTCCTATATTCCTAGATTACTAACGACCAATTCAGACCA 722
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   618 catgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       723 CATGACATTCCTGCAAAGGGTCAAGAACATGCTCTACCCTCTGGCCCTGTCCTACCTTTG 782
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               678 ccaccgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    738 ggagtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttgga 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              798 ctatoccaaaccogtgatgoccaacatgatcttcattggtggtatcaactgccatcaggg 857
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  903 TTACCCCAGGCCGATCATGCCCAACATGGTCTTCATTGGGGGCCATCAACTGTGCCAACGG 962
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION TITLE OF INVENTION: THEREIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             858 aaagccgttgcctatggaatttgaagcctacatta 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 963 GAAGCCACTATCTCAGGTCTGTATTGGTGCCTTTA 997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CORRESPONDENCE ADDRESS:
ADDRESSEE: CUSHMAN DARBY & CUSHMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         UMBER: PCT/US92/00282
19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ; Sequence 16, Application PC/TUS9200282
; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              APPLICANT: OWENS, IDA S. APPLICANT: RITTER, JOSEPH K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RY: U.S.A.
20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PCT-US92-00282-16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Db
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          δy
                                                                                                                                                                                                                                                                                   δy
                                                                                                                                                                                                                                                                                                                                                                                                  δy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δà
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
```

```
178 CTGGGCTGAGAGGTGGTGCTGGTGGTACCCATTGATGGCAGCCACTGGCTCG-CAT 236
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            141 gaggtcggtggtggagaaactcattctcagggggcatgaggtggttgtagtcatgccaga 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      237 GCGGGAGGCCGTGCGGGAGCTCCATGCCAGAGGCCACCAGGCGGTGGTCCTCACCCCAGA 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     201 ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              261 taccctggaggatctggaccgggagttcaaggcttttgcccatgctcaat---ggaaagc 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      357 GACCCAGGATGTAGATCGCCTTGTGCTGGGCCACACTCAACTGTACTTTGAAACAGA 416
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  318 acaagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttatt 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                378 tttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaatacttaaaggagag 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     477 TCATAGGICTIGIGIGGAGCTACTGCATAATGAGGCCCTGATCAGGCACCTGAATGCTAC 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    438 ttcttttgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaata 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             498 tttctccctccctccgtggtcttcgccaggggaatactttgccactatcttgaagaagg 557
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       597 CCTATCAATTCCTGCTGTGTTTTTTTGAGGAACATTCCATGTGATTTAGACTTTAAGGG 656
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      558 tgcacagtgccctgctcctttcctatgtccccagaattctcttagggttctcagatgc 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                657 CACACAGIGICCAAAICCIICCICTAIAIICCIAAAGIIACIAACGACCAAIICAGACCA 716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               618 catgactttcaaggagagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      678 ccaccgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  738 ggagtatgatcttacagccacacatcaatttggttgttgcgaacggactttgttttgga 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          837 AGTGGTGGATCTTCTCAGCCATGCATCTGTGTGGCTGTTCCGAGGGGACTTTGTGATGGA 896
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                     / Match 8.0%; Score 186.6; DB 5; Length 1448; Local Similarity 53.8%; Pred. No. 1.1e-43; les 429; Conservative 0; Mismatches 364; Indels 4;
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 26581
REFERENCE/DOCKET NUMBER: 91532-PCT
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
TELEPAX: 202-822-0944
                                                                                                                                        TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 16:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                             LENGTH: 1448 base pairs
TYPE: NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 429; Conservative
                                                                                                                                                                                                                                                                 single
                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                               HYPOTHETICAL: YES
                                                                                                                                                                                                                                                            STRANDEDNESS:
                                                                                                                                                                                                                                                                                                           MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                     PCT-US92-00282-16
                                                                                                                                                                                                                                                                                  TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            В
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
```

1213 aagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatgacttctgaa 1272

g

g

APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.

Sequence 10, Application PC/TUS9200282 GENERAL INFORMATION:

RESULT 6 PCT-US92-00282-10

: CUSHMAN DARBY & CUSHMAN 1615 L STREET, N.W.

WASHINGTON XX: U.S.A. 20036-5601

COUNTRY:

NUMBER OF SEQUENCES: 4

ADDRESSEE:

```
1251 tgttctggaaatgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaa 1310
                 1311 aagttacaaggagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagcc 1370
                                                                                                    1371 gctggacctggccgtgttctggggtggagtttgtgatgaggcacaaggggggcgccacacct 1430
                                                                                                                                                                                     1431 gcgcccgcagcaccacgacctcacctggtaccagtaccattccttggacgtgattggttt 1490
                                                                                                                                                                                                                                                                                   1482 tcgggtcgcagcacacacctcacctggatccagtaccacttttggatgtgatagcatt 1541
                                                                                                                                                                                                                                                                                                                                1491 cctcttggccgtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggcta 1550
                                                                                                                                                                                                                                                                                                                                                      9.6%; Score 222.4; DB 5; Length 783; 99.6%; Pred. No. 3.9e-54; tive 0; Mismatches 1; Indels 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT: OFENS, 1DA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT1 AND A MUTATION
TITLE OF INVENTION: THEREIN.
NUMBER OF SEQUENCES: 4
ADDRESSEE: CUSHAAN DARBY & CUSHAAN
STREET: 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SOFTWARE: PatentIn Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91532-PCT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 22, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REFERENCE/DOCKET NUMBER: 91:
TELECOMMUNICATION INFORMATION:
TELEPHONE: 202-861-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TELEFAX: 202-822-0944
TELEX: 6714627 CUSH
INFORMATION FOR SEQ ID NO: 22:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 2658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   783 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NUCLEIC ACID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                              1551 ccggaa 1556
                                                                                                                                                                                                                                                                                                                                                                                                                                                       1602 ccgaaa 1607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SULT 5
T-US92-00282-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PCT-US92-00282-22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     LENGTH:
                                                                                                                                                                                                  Сp
                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                              ò
```

MEDICAL IND PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PARENTIN FELEASE #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110

Floppy disk

COMPUTER READABLE FORM: MEDIUM TYPE: Floppy

REFERENCE/DOCKET NUMBER: 91532-PCT

26581

CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 2658

TELECOMMUNICATION INFORMATION: TELEPHONE: 202-861-3000

202-822-0944

TELEFAX:

6714527 CUSH

INFORMATION FOR SEQ ID NO: 10: SEQUENCE CHARACTERISTICS:

1003 base pairs

NUCLEIC ACID

single

STRANDEDNESS:

TOPOLOGY: 1.inear MOLECULE TYPE: CDNA

PCT-US92-00282-10

```
81 ctttgccgaygcagggaagctactggtagtgcccatggatgggagccactggttcaccat 140
                                                                                                                                                                                                                      183 CTGGGCTGAGAGTGGGAAGGTGCTGGTGGTGCCCACTGATGGCAGCCACTGGCTCAGCAT 242
                                                                                                                                                                                              141 gaggtcggtygtggagaaactcattctcagggggcatgaggtggttgtagtcatgccaga 200
                                                                                                                                                                                                                                                                                               201 ggtgagttgycaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                               3; Gaps
                                                                                                                                                                                                                                                                                                                       8.3%; Score 192.6; DB 5; Length 1008; 53.1%; Pred. No. 1.7e-45;
                                                  Indels
                          Pred. No. 1.7e-45;
0; Mismatches 379;
                  53.18;
                     Best Local Similarity 53.19
Matches 433; Conservative
  Query Match
```

1093 ggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgtttatgaaagc 1152

Matches 223; Conservative

ö

```
1087 GCTIGGAGIGCACIGAGAACAGCATATGATTTCTTGCTTTGGGGAAAAAGAATGATGCTA 1146
                                                                                                                                                                                                                                                                                                                                                         caattgatcettaaccaataatggtcagtcetetetgteetgetteataggtgcee 2068
                                                                                                                                                                                                                                  2129 gcttggagtgcactgagaacagcatatgatttcttgctttggggaaaaagaatgatgcta 2188
                                                          1949 ccgctgcccctactgcaaatggcagttttaatcttatcttttggcttctgcagatggttg 2008
                                                                                                                                                                       967 CAATTGATCCTTAACCAATAATGGTCAGTCCTCATCTCTGTCGTGCTTCATAGGTGCCAC 1026
                                                                                                                                                                                                             102 ctttagctctggggagttgtggaaaggtgctggtgtggcccacagaatacagccattggat 161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 14.8%; Score 344.4; DB 4; Length 2107; Best Local Similarity 53.9%; Pred. No. 5.6e-89; Matches 811; Conservative 0; Mismatches 671; Indels 24; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    135 caccatgaggtcggtggtggagaactcatctcagggggcatgaggtggttgtagtcat 194
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TITLE OF INVENTION: CHARACTERIZATION AND USE OF AN ISOLATED URIDINE ITLE OF INVENTION: DIPHOSPHO-GLUCURONOSYLTRANSFERASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CURRENT FILING DATE: 1999-02-08
EARLIER APPLICATION NUMBER: PCT/CA97/00328
EARLIER FILING DATE: 1997-05-16
EARLIER APPLICATION NUMBER: US 08/649,319
EARLIER FILING DATE: 1996-05-17
NUMBER OF SEQ ID NOS: 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILE REFERENCE: 1259-449
CURRENT APPLICATION NUMBER: US/09/180,852
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; Sequence 1, Application US/09180852
; Patent No. 6287834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               GENERAL INPORMATION:
APPLICANT: BELANGER, Alain
APPLICANT: HOW, Dean W.
APPLICANT: BEAULIEU, MARTIN
APPLICANT: LEVESOUE, Eric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PatentIn Ver. 2.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2309 tttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1267 TTTCCTACAACT 1278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ORGANISM: Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ; LOCATION: (52)..(1644)
US-09-180-852-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NAME/KEY: CDS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LENGTH: 2107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-09-180-852-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PYPE: DNA
                                                                                                                                     δ
                                                                                                                                                                 8
                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ð
```

```
951 tccagagaagaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcct 1010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1011 gtggcggtacactggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtg 1070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .002 gtcagaagaaagtgccaacatgattgcatcagcccttgcccagatcccacaaaaggttct 1061
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1062 atggagatttgatggcaagaagccaaatactttaggttccaatactcgactgtataagtg 1121
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1071 gctaccccaaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctgg 1130
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1131 ttcccatggtgtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtt 1190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1191 tggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaa 1250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1242 tgcggatcaacatgataacattgctcacatgaaagccaagggagcagcctcagtgtgga 1301
                                                                                                     249 ttcaacttcatataccctggaggatctggaccggga------gttcaaggcttt 296
195 gccagaggtgagttggcaactgg-----gaagatcactgaattgcacagtgaagactta 248
                                                                                                                                                    282 toctacatotttaactaaaaatgatttggaagattttttttatgaaaatgttcgatagatg 341
                                                                                                                                                                                                     297 tgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaatgggttcata 356
                                                                                                                                                                                                                                                                                                        417 agtagaatacttaaaggagagttcttttgatgcagtgtttctcgatccttttgataactg 476
                                                                                                                                                                                                                                                                                                                                                                                                                                                             462 tatgagaaaactacaagagtcaaaatttgatgtccttctggcagatgccgttaatccctg 521
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           477 tggcttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatact 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              537 ttgccactatcttg---aagaaggtgcacagtgccctgctcctcttcctatgtccccag 593
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          651 catgcacttggaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagc 710
                                              222 atcttcggcttctattcttgtcaatgccagtaaatcatctgctattaaattagaagttta 281
                                                                                                                                                                                                                                                          342 gacatatagtatttcaaaaaatacattttggtcatatttttcacaactacaagaattgtg 401
                                                                                                                                                                                                                                                                                                                                                       402 ttgggaatattctgactataatataaagctctgtgaagatgcagttttgaacaagaaact 461
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             522 tggtgagetgetgetgactacttaacatacctttctgtacagtctccgcttctctgt 581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  594 aattotottagggttotcagatgocatgactttcaaggagagagagagaaccacat--- 650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     711 ctctgaaattctccaaacacctgttacggagtatgatctctacagccacacatcaatttg 770
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               771 gitgitgcgaacggactitgtittggactatcccaaacccgtgatgcccaacatgatctt 830
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  831 cattggtggtatcaactgccatcagggaaagccgttgcctatggaatttgaagcctacat 890
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           702 tatgctttattttgacttttggtttcaagcatatgatctgaagaagtgggaccagtttta 761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              762 tagtgaagttctaggaagacccactacattatttgagacaatggggaaagctgaaatgtg 821
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 822 geteattegaacetattgggattttgaattteetegeeeattettaeeaaatgttgattt 881
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    882 tgttggaggacttcactgtaaaccagccaaacccttgcctaaggaaatggaagagtttgt 941
                                                                                                  ŏ
                                                                                                                                                 qq
                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                    염
                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                          8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             q
                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
```

```
2096 GAGTGTAGGTGAAATGAATGAATGGCTTGGAGTGCACTGAGAACAGCATATGTTTTTTT 2155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2216 TIGCTIATGICAAATGGAGCTGAATTTGATAAAAACCCAAAATACAGCTATGAAGTGCTG 2275
                                                                               2045 tctgtcctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacctta 2104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2036 TCTGCCCTGCTTCATAGGTGCCACCTTGTGTTTAAAGAAGGGAAGCTTTGTACCTTTA 2095
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2165 ctttygggaaaaagaatgatgctatgaaattggtgggtggtgtatttgagaagataatca 2224
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2156 CTTTGGGGAAAAAGAATGATGCTATGAAATTGGTGGGGGGTGTATTTGAGAAGATAATCA 2215
                                                                1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagccccagagtg 1744
                                                                                                                                                                                                                                                  1745 ctttaaaaaattctcttaaataaaaataataatagactcgctagtcagtaaagatatttgaat 1804
                                                                                                                                                                                                                                                                                                                                                                           1865 gtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttggga 1924
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1985 tcttitggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatc 2044
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1976 TCTTTTGGCTTCTGCAGATGGTTGCAATTGATCCTTAACCAATAATGGTCAGTCCTCATC 2035
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2105 gagtytaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttcttg 2164
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2225 ttgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctg 2284
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    APPLICAMT OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
TITLE OF INVENTION: THE GENETIC LOCUS UGT! AND A MUTATION
TITLE OF INVENTION: THEREIN.
UNBERS OF SEQUENCES: 40
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2285 ggcaugtttacttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2276 GGCAAGTTTACTTTTTCTGATGTTTCCTACAACT 2311
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ADDRESSEE: CUSHMAN DARBY & CUSHMAN STREET: 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 25, Application PC/TUS9200282 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CITY: WASHINGTON STATE: D.C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -US92-00282-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY:
                              g
                                                              ò
                                                                                         g
                                                                                                                         ò
                                                                                                                                                     g
                                                                                                                                                                                  ò
                                                                                                                                                                                                               셤
                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
```

```
1291 aaagcagtcatcaatgacaaagttacaaggagaacatcatgcgcctctccagccttcac 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1411 cacaagggcjcgccacacctgcgccccgcagcccacgacctcacctggtaccagtaccat 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1471 tectiggacytgatiggittectetiggeegiegiget-gacagiggeeticateaeeti 1529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1530 taaatgttgtgcttatggctaccggaaatgcttggggaaaaagggcgagttaagaaagc 1589
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1590 ccacaaatccaagacccattgagaagtgggtgggaaataaggtaaaattttgaaccattc 1649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1650 cctagtcatttccaaacttgaaaacagaatcagtgttaaattcattttattcttattaag 1709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1770 ataatagactcgctagtcagtaaagatatttgaatatgtatcgtg-cccctccggtgtc 1828
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1829 tttgatcaggatgacatgtgccatttttcagaggacgtgcagacaggctggcattctaga 1888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1889 ttacttttcttactctgaaacatggcctgtttgggagtgcgggattcaaaggtggtccca 1948
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1351 aaggaccgc:cggtggagccgctggacctggccgtgttctgggtggagtttgtgatgatgagg 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     308 AAGGACCGCCCGTGGAGCCGCTGGACCTGGCCGTGTTCTGGGTGGAGTTTGTGATGAGG 367
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             368 CACAAGGGCGCCACACCTGCGCCCCGCACGACCTCACCTGGTACCAGTACCAT 427
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                428 TCCTTGGAC3TGATTGGTTTCCTCTTGGCCGTCTGGACAGTGGCCTTCATCACCACT 487
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          488 TAAATGTTGTGCTTATGGCTACCGGAAATGCTTGGGGAAAAAGGGCGAGTTAAGAAAGC 547
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   548 CCACAAATCCAAGACCCATTGAGAAGTGGGTGGGAAATAAGGTAAAATTTTGAACCATTC 607
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         728 ATAATAGACICGCTAGTCAGTAAAGATATTTGAATATGTATCGTGCCCCCCTCTGGTGTC 787
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      248 AACGAAACTGTCTTTGTGTTTAGTTACAAGGAGAACATCATGCGCCTCCCAGCCTTCAC 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .,
.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 41.7%; Score 967.2; DB 5; Length 1561; Best Local Similarity 98.0%; Pred. No. 3.3e-268; Matches 1011; Conservative 0; Mismatches 18; Indels 3;
                                                    MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILING DATE: 19920110
                                                                                                                                                                                                                                                                        ATTORNEY AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 9153;
TELECOMMUNICATION INFORMATION:
TELECHONE: 202-661-3000
TELECHONE: 202-6944
TELEX: 6714-627 COSH
INFORMATION FOR SEQ ID NO: 25:
SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1561 base pairs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: NUCLEIC ACID
STRANDEDNESS: single
                              COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: CDNA
PCT-US92-00282-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         linear
20036-5601
                                                                                                                                                                                                                             FILING DATE: 1 CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          윰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            윱
```

ë

```
1205 acaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctggaaatga 1264
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              965 ctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactg 1024
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    956 CTATGCCAATTGCTGATGCTTTGGGCAAAATCCCTCAGACAGTCCTGTGGCGGTACACTG 1015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1025 gaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1016 GAACCCGACCATCGAATCTTGCGAACAACACGATACTTGTTAAGTGGCTACCCCAAAACG 1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1085 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1196 ACAATGCAAAGCGCATGGAGACTAAGGGAGCTGGAGTGACCTGAATGTTCTGGAAATGA 1255
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1265 cttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggaga 1324
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1325 acatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctggccg 1384
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1385 tgttctgggtggagtttgtgatgaggcacaaggggcgcgccacacctgcgcccgcagcc 1444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1445 acgaceteacetggtaceagtaceatteettggaegtgattggttteetettggeegteg 1504
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       356 ACTCTGCTATGCTTTTGTCTGGCTGTTCCCACTTACTGCACAACAAGGAGCTCATGGCCT 415
                                              425 acttaaaggagagttetttgatgeagtgtttetegateettttgataactgtggettaa 484
                                                                                             416 CCCTGGCAGAAAGCAGCTTTGATGTCATGCTGACGGACCCTTTCCTTTCCTTGCAGCCCCA 475
                                                                                                                                                                                   476 TCGIGGCCCAGIACCIGICTCTGCCCACIGIATTCTTCTTGCATGCACTGCCATGCAGCC 535
                                                                                                                                                                                                                                                                                                                                                                                                                                                               656 AGAACTTTCTGTGCGACGTGTTTATTCCCCGTATGCAACCCTTGCCTCAGAATTCCTTC 715
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     716 AGAGAGAGGIGACTGTCCAGGACCTATIGAGCTCTGCATCTGTCTGGCTGTTTAGAAGTG 775
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     485 ttgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgccact 544
                                                                                                                                                                                                                                  545 atcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctcttag 604
                                                                                                                                                                                                                                                                                                                          605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664
                                                                                                                                                                                                                                                                                                                                                                      596 CTCATTCAGATCACATGACCTTCCTGCAGCGGTGAAGAACATGCTCATTGCCTTTTCAC 655
                                                                                                                                                                                                                                                                                                                                                                                                                   665 aacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    785 actttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggtatca 844
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            845 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 904
                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q
                                                                                        g
                                                                                                                                         δ
                                                                                                                                                                                   셤
                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                         셤
                                                                                                                                                                                                                                                                                                                          δ
                                                                                                                                                                                                                                                                                                                                                                 셤
                                                                                                                                                                                                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ΟŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ^{\circ}
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              366 ttttgact-tatttttttcaaattgcaggagtttgtttaaagacaaaaaattagtagaat 424
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     128 actggttcaccatgaggtcggtggtggagaaactcattctcaggggggcatgaggtggttg 187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          116 ACTGGCTGAGCATGCTTGGGGCCATCCAGCTGCAGCAGCAGGGGGACATGAATAGTTG 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         188 tagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     176 TCCTAGCACCTGACGCCTCGTTGTACATCAGAGGGGGGCATTTTACACCTTGAAGACGT 235
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 248 attcaacttcatataccctggaggatctggaccgggagtt--caaggcttttgcccatgc 305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           236 ACCCTGTGCCATTCCAAAGGGAGGATGTGAAAGAGTCTTTTGTTAGTCTCGGGCATAATG 295
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306 tcaatggaaagcacaagtacgaagtatattattctctattaatgggttcatacaatgacat 365
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pred. No. 0;
0; Mismatches 388; Indels 3; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        69.4%; Score 1609.2; DB 5; Length 2336; 82.7%; Pred. No. 0;
                                                                                                                                                                                                                        TITLE OF INVENTION: THE GENETIC LOCUS UGIL AND A MUTATION TITLE OF INVENTION: THEREIN, NUMBER OF SEQUENCES: 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REFERENCE/DOCKET NUMBER: 91532-PCT TELECOMMUNICATION INFORMATION: TELEPHONE: 202-861-300 TELEPAX: 202-822-0944 TELEX: 6714627 CUSH INFORMATION FOR SEQ ID NO: 1:
                                                                                                                                                                                                                                                                                                                     E: CUSHMAN DARBY & CUSHMAN 1615 L STREET, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICATION NUMBER: PCT/US92/00282
FILING DATE: 19920110
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER: IBM PC COmpatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                  Sequence 1, Application PC/TUS9200282 GENERAL INFORMATION:
Db 2292 TTTTCTGATGTTTCCTACAACT 2314
                                                                                                                                                                              APPLICANT: OWENS, IDA S.
APPLICANT: RITTER, JOSEPH K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             26581
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: SCOTT, WATSON T.
REGISTRATION NUMBER: 2658
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE CHARACTERISTICS:
LENGTH: 2336 base pairs
TYPE: NUCLEIC ACID
STRANDEDNESS: single
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches 1865; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                          COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                                               CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MOLECULE TYPE: CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Local Similarity
                                                                                                                                                                                                                                                                                                                                                                 WASHINGTON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 linear
                                                                                                                                                                                                                                                                                                                                                                                                                Y: U.S.A. 20036-5601
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 19
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDIUM TYPE:
                                                                                                                                                                                                                                                                                                                        ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCT-US92-00282-1
                                                                                             RESULT 2
PCT-US92-00282-1
                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                           STREET:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
```

g

ò

ctccagccttcacaaggaccgccggtggagccgctggacctggcgtgtgtgga 1397 1452 GTACCAGTACCATTCCTTGGACGTGATTGGTTTCCTCTTGGCCGTCGTCGTGCTGACAGTGGC 1511 1218 catggagactaagggagctggagtgaccctgaatgttctggaaatgacttctgaagattt 1277 1212 CATGGAGACTAAGGGAGCTGGAGTGACCCTGAATGTTCTGGAAATGACTTCTGAAGATTT 1271 1278 agaaaatgctctaaaagcagtcatcaatgacaaagttacaaggagaacatcatgcgcct 1337 1332 CTCCAGCCTTCACAAGGACCGCCGGTGGAGCCGCTGGACCTGGCCGTGTTCTGGGTGGA 1391 1458 gtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctgacagtggc 1517 1578 agttaagaaagcccacaaatccaagacccattgagaagtgggggaaataaggtaaaat 1637 1638 tttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgttaaattcattt 1697 1632 TITGAACCATICCCTAGICATITCCAAACTIGAAAACAGAATCAGIGITAAAITCAITIT 1691 1698 attettattaaggaaataetttgeataattaateageeecagagtgetttaaaaaatte 1757 1692 ATTCTTATAAGGAAATACTTTGCATAAATTAATCAGCCCCAGAGTGCTTTAAAAAATTC 1751 1758 tottaaataaaaataatagaotogotagtoagtaaagatatttgaatatgtatogtgooc 1817 1752 TCTTAAATAAAAATAAATAGACTCGCTAGTCAGTAAAGATATTTGAATATGTATCGTGCCC 1811 1818 cctccggtgtctttgatcaggatgacatgtgccatttttcagaggacgtgcagacaggct 1877 1878 ggcattctagattacttttcttactctgaaacatggcctgtttggggagtgcgggattcaa 1937 1872 GGCATTCTASATTACTTTTCTTACTCTGAAACATGGCCTGTTTGGGAGTGCGGGATTCAA 1931 1932 AGGTGGTCCCACCGCTGCCCTACTGCAAATGGCAGTTTTAATCTTATCTTTTGGCTTCT 1991 2052 ATAGGTGCCACCTTGTGTGTGTTTAAAGAAGGAAGCTTTGTACCTTTAGAGTGTAGGTGAA 2111 2112 ATGAATGAATGGAATGGAAAAAA 2171 gaatgatgetatgaaattggtggtggtggtatttgagaagataatcattgettatgtcaa 2237 2172 GAATGATGCTATGAAATTGGTGGTGGTGTATTTGAGAAGATAATCATTGCTTATGTGA 2231 aggitggicccaccgcigcccctactgcaaatggcagitttaaicttaictittggctict 1997 gcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgtcctgcttc 2057 2118 atgaatgaatggcttggagtgcactgagaacagcatatgatttcttgctttggggaaaaa 2177 2238 atggagctg.aatttgataaaaacccaaaatacagctatgaagtgctgggcaagtttactt 2297 2058 ataggtgccaccttgtgtgttttaaagaagggaagctttgtacctttagagtgtaggtgaa 2298 tttttctgalgtttcctacaact 2320 1338 1938 1998 g g ò 셤 g a ò õ õ g ò 셤 ò 셤 ò 셤 ò g ò 셤 셤 ò g ò 셤 à

```
August 21, 2002, 11:59:18; Search time 148.28 Seconds (without alignments) 3843.200 Million cell updates/sec
                                                                                                                                                                                                                                                                      1 ctcagctgcagttctctgat......ttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                         767066
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1: /cgn2_6/ptodata/2/ina/5A_COMB.seq:*
2: /cgn2_6/ptodata/2/ina/5B_COMB.seq:*
3: /cgn2_6/ptodata/2/ina/6A_COMB.seq:*
5: /cgn2_6/ptodata/2/ina/6B_COMB.seq:*
5: /cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
6: /cgn2_6/ptodata/2/ina/PcTUS_COMB.seq:*
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                383533 seqs, 122816752 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                      OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                             IDENTITY_NUC
Gapop 10.0 , Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Issued_Patents_NA:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                        US-09-835-082-3
2320
                                                                                                                                                                                                                      Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Database :
                                                                                                                                                                                                                                                                                                                                                                                Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pr.
SC
                                                                                                                                  Run on:
```

have a	core greater than or equal to the score of the result being printed,	
2	bei	ion
red. No. is the number of results predicted by chance to have a	result	nd is derived by analysis of the total score distribution.
þλ	he	è di
cted	of	score
predi	score	tota1
results	to the	of the
of 1	qual	sis
umber	or e	analy
he n	than	l by
is t	ter	ived
No.	gree	deı
red.	core	nd is

Description	Sequence 2, Appli Sequence 1, Appli Sequence 12, Appli Sequence 12, Appli Sequence 10, Appli Sequence 14, Appli Sequence 14, Appli Sequence 18, Appli Sequence 17, Appli Sequence 20, Appli Sequence 1, Appli Sequence 2, Appli Sequence 2, Appli Sequence 1, Appli
SUMMARIES	PCT-US92-00282-2 PCT-US92-00282-1 PCT-US92-00282-1 BCT-US92-00282-10 PCT-US92-00282-10 PCT-US92-00282-18 PCT-US92-00282-18 PCT-US92-00282-18 PCT-US92-00282-18 PCT-US92-00282-18 PCT-US92-00282-18 PCT-US92-00282-18 PCT-US92-00282-18 US-08-197-226-1 US-08-122-421-1 US-08-123-463-14 US-08-132-463-14 US-08-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1 US-09-103-840A-1
DB	~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~
Length	2339 2336 2316 2107 2107 2107 10448 1197 1197 1197 1197 1218 1607 1607 1731 1731 1731 1731 1731 1731 1731 17
% Query Match	000140 000140 000140 00000 00000 00000 00000 0000 0000 0000
Score	16333 946792 19224 19224 19224 19224 19224 1930 1930 1930 1930 1930 1930 1930 1930
Result	C C C C C C C C C C C C C C C C C C C

		1;	
1, Appli 3, Appli 6, 5, Appli 7, Appli 8, 21, Appli 8, 21, Appli 8, 80, Appli 8, 80, Appli 9, 80, Appli 8		; Gaps	cat 140 CAT 131
Sequence seq	2	h 2339 3;	gttcac
x x x x x x x x x x x x x x x x x x x	MUTATION	Length Indels	ccactg CCCTG
o nm mmm	۶ د	DB 5; 371;	ctttgccgaggcagggaagctactggtagtgccatggatgg
US-09-353-332-1 US-08-078-090-3 5180581-1 US-08-281-916-5 US-08-460-725-7 US-09-004-838-21 US-09-004-838-87 US-09-234-613-80 US-09-234-613-80 US-08-480-784-13 US-08-480-784-13 US-08-481-13 US-08-481-13 US-08-481-13 US-08-481-13 US-08-86-13 US-08-85-10202-13 PCT-US95-10202-13	MENTS US UGT1	0; ches	catgga CACTGA
9-353- 8-078- 8-078- 8-281-1 9-004- 9-004- 9-234- 8-483- 8-883- 8	ALIGNMENT 0282 1C LOCUS U CUSHMAN 2/00282 2/00282 532-PCT	Score 1633.4 Pred. No. 0;	agtgee GGTGCC
US-09-38 US-08-07 US-08-07 US-08-08-08 US-08-08-08-08-08-08-08-08-08-08-08-08-08-	PC/TUS9200282 A S. OSEPH K. OSEPH K. THE GENETIC L. THEREIN. A 0 S: I DARBY & CUSH FET, N.W. FET, N.W. PCT, OMPATION: NATA: BRITON: NATA: 1044 HMER: 91532- ORAMITON: 110 110 110 110 110 110 110 110 110 11		actggt GTTGG
446444664444666	р жан и инбан байна и	70.48 83.38 Live	yaaget \AAGGT
4839 10607 10607 10607 10607 10607 10607 10607 10708 1	Pilication PC/TUS92 WATION: OWENS, IDA S. FRITTER, JOSEPH K. FRITTER, JOSEPH K. FUNITON: THE GENE- PEDUENCES: CUSHMAN DARBY & CUSHMAN DARBY & Ildís L. STREET, N.W SINGTON C. U.S.A. DISABLE FORM: PREDATION DAPRES: PALENTIN Release LICATION DAPRES: PALENTIN Release LICATION DAPRES: DAN NUMBER: PCT/US NUMBER: PCT/US NUMBER: DS2010 ONT, WATSON T. INON NUMBER: 26581 ONT, WATSON T. ON NUMBER: 26581 ONT, MATSON T. ON NUMBER: 26581 ONT, MATSON T. INDIANTING THE STATICS: ANDOKET NUMBER: 26581 ONT, MATSON T. INDIANTING THE STATICS: ANDOKET NUMBER: 26581 ONT, MATSON T. INDIANTING THE STATICS: ANDOKET NUMBER: 26581 ONT, MATSON T. INDIANTING THE STATICS: ANDOKET NUMBER: 26581 ONT, MATSON T. ANDOKET NUMBER: 26581 ONT, MATSON T. INDIANTING THE STATICS: ANDOKET NUMBER: 26581 ONT, MATSON T. INDIANTING THE STATICS: ANDOKET NUMBER: 26581 ONT, MATSON T. INDIANTING THE STATICS: ANDOKET NUMBER: 26581 ONT, MATSON T. ANDOKET NUMBER: 36581 ONT,	70.4 ilarity 83.3 Conservative	gcagge AGTGG
	1282-2 INFORMATION: OWENS, IDA S. ANT: RITTER, JOSEPH OF INVENTION: THE GE OF INVENTION: THE GE OF INVENTION: THEREIS OF SEQUENCES: 40 PROMISE ADDRESS: CUSHMAN DARBY ESSE: 1615 L STREET, N EWASHINGTON E: D.C. 120036-5601 EER READABLE FORM: THE: PLOPPY disk UNTER: IBM PC COMPATION EST D.C. ANTING SYSTEM: PC-DOS WARRE: PELOPPY disk UNTER: 19920110 ATING SYSTEM: PC-DOS WARRE: PATION NOWBER: PCT/ FING DATE: 19920110 SSIFCATION DATA: SCOTT, WATSON T. ESTRATION NUMBER: 265 SHENCE/DOCKET	<u> </u>	gccgag GCTGAG
88 88888888888888888888888888888888888	OSSESSION OF THE CONTROL OF THE CONT	itch 3a1 186	1 cttt 2 CTGG
2222 3322 3323 34434 443 443 443 443 443	ULT TE	Query Ma Best Loc Matches	. 2
00000000	REGION CONTRACTOR OF CONTRACTO	Cmz	QY Db

Search completed: August 21, 2002, 12:46:07 Job time: 22285 sec

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  115 atggatgggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggg 174
                                                                                                                                                                                                                              175 catgaggtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgc 234
                                                                                                                                                                                                                                                                  61 catgaggtggttgtagtcatgccagaggtgagttggcaactggaaagatcactgaattgc 120
                                                                                                                                                                                                                                                                                                                                     121 acagigaagactiacicaaccicgiacactitigaagaicagaaccgggaaitcatggii 180
                                                                                                                                                                                                                                                                                                                                                                         295 tttgcccatgctcaatggaaagcacaagtacgaagtatatattctctattaatgggttca 354
                                                                                                                                                                                                                                                                                                                                                                                            ttagtagaatacttaaaggagagttcttttgatgcagtgtttctcgatccttttgataac 474
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     535 ctttgccactatcttgaagaaggtgcacagtgccctgctcctctttcctatgtccccaga 594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            cacttggaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctct 714
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  541 cacttggaggaccatttattttgccagtatcttttagaaatgccctagaaatagcctct 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    715 gaaattotocaaacacctgttacggagtatgatctotacagccacacatcaatttggttg 774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      601 gaaattctccaaaacccctgtcacggcatatgatctctacagtcacacatcaatttggttg 660
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        775 ttgcgaacggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcatt 834
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             661 ttgcgaacggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcatt 720
                                                                                                                                                                                                                                                                                                  235 acagigaagactiaticaacticataccciggaggatciggaccgggagticaaggct 294
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             595 attotottagggttotcagatgccatgactttcaaggagagagagagaccacatcatg 654
                                                                                                                           Gaps
                                                                                                                                                                                            1 atggatgggagtcactggttcaccatgcagtcggtggtggagaaacttatcctcaggggg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                     Score 659.8; DB 21; Length 759;
Pred. No. 4.4e-177;
0; Mismatches 62; Indels 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Apoptosis; mouse; cancer; autoimmune disease; viral infection;
animals or modified cells e.g. for pharmacogenetic screening.
                                  Sequence 759 BP; 190 A; 165 C; 169 G; 235 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             835 ggtggtatcaactgccatcagggaaagccgttgcctatg 873
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 721 ggtggtatcaactgtcatcagggaaagccattgcctatg 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Murine apoptosis related DNA sequence #133.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABL01468 standard; DNA; 874 BP.
                                                                                       28.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         15-MAR-2002 (first entry)
                                                                                                                         Matches 697; Conservative
                                                                                                        Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ABL01468;
                                                                                                                                                                                                                                                                                                                                                                                                                                             355
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 1
ABL01468
ID ABL0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S X S
                                                                                                                                                                                          P
                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                              Q
                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                   ŏ
                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                           οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     οχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
```

```
The present invention relates to nucleic acids from the mouse, where the nucleic acid is associated with apoptosis. The sequences can be used in the diagnosis, treatment and prevention of diseases associated with excessive or inadequate apoptosis, including tumours, autoimmune diseases, virlal infections, degradative diseases (Alzhaher's 's' expertission's and Huntington's diseases), repertusion injury, stroke and alcohol-induced injury to the liver, for identifying agents for treating these diseases, and to prepare transgenic animals in which expression of an apoptosis related sequence is altered. These are useful for genetic and/or pharmacological investigations of apoptosis and related diseases, apoptosis related sequences of the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           952 ccagagaagaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctg 1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1072 ctaccccaaaacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggt 1131
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1012 tggcggtacactggaacccgaccatcgaatcttgcgaacaacaacgatacttgttaagtgg 1071
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1132 teceatggtgtttatgaaageatatgeaatggegtteeeatggtgatgatgatgeeettgttt 1191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1192 ggtgatcagatggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaat 1251
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          892 aatgettetggagaacatggaattgtggttttetetttgggateaatggteteagaaatt 951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         61 aacgoctotggggagcatggcatcgtggttttctcttttggggatccatggtctcagagatt 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           121 ccggagaagaaagccatggaaattgctgaggcttttgggcagaattcctcagacggtcctg 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          181 tggcgctacaccggaactagaccatcgaatcttgcaaagaacacaattcttgtcaaatgg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         241 ctaccccaaaatgatctgcttggtcatccaaagactcgggcattcatcacacactctggc 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        301 toccatggtatttatgaaggaatatgcaatggagttccgatggtgatgatgcccctattt 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      361 ggcgatcagatggacaatgccaagcgcatggaaactcgggggagctggggtgaccctgaat 420
Alzheimer's disease; Parkinson's disease; Huntington's disease; reperfusion injury; stroke; liver damage; dilatory cardiomyopathy; transgenic animal; hepatotropic; antialcoholism; cytostatic; immunosuppressive; virucide; nootropic; neuroprotective; vasotropic; antiparkinsonian; cerebroprotective; ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Schoenfeld N, Braziulis E, Cramer U, Gewies A, Voss
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    New apoptosis-associated nucleic acid sequences and polypeptides, useful for diagnosis, treatment and prevention of e.g. tumors and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Match 24.9%; Score 578.8; DB 24; Length 874; Local Similarity 84.9%; Pred. No. 5.3e-154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches 115; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 874 BP; 222 A; 202 C; 233 G; 210 T; 7 other;
                                                                                                                                                                                                                                                                                                                                                                                                (PLAC ) MAX PLANCK GES FOERDERUNG WISSENSCHAFTEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gille H, Klein M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 1; Page 184; 227pp; German.
                                                                                                                                                                                                                                                                                                 30-MAY-2001; 2001DE-1026344
                                                                                                                                                                                                                                                                                                                                                 14-JUL-2000; 2000DE-1034303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches 646; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Albayrak T,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2002-115563/16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           neurodegeneration -
                                                                                                                                                                                                   DE10126344-A1.
                                                                                                                                                                                                                                                  24-JAN-2002.
                                                                                                                                                                                                                                                                                                                                                                                                                                                Grimm S,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
       δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    οy
```

Uncleotide sequences AA245110-245118 are exons IA-JJ of the human uridine diphosphate-glucuronosyltransferase I (UGTI) gene. The UGTS are a family of enzymes that catalyse the glucuronic acid conjugation of a wide range of endogenous and exogenous substrates including phenols.

I cange of endogenous and exogenous substrates including phenols.

C range of endogenous and exogenous substrates including phenols.

C result in toxic substances being converted to compounds which are more water soluble and are excreted. The invention relates to and identifies usful as probes for detecting UGTI locus polymorphisms equences are usful as probes for detecting UGTI locus polymorphisms are associated with Crigler-Najjar and Gilbert syndromes (unconjugated with Crigler-Najjar and Gilbert syndromes (unconjugated with Crigler-Najjar and Gilbert syndromes (unconjugated the UGTI expression or activity; These polymorphisms are associated with Crigler-Najjar and Gilbert syndromes (unconjugated conjugated with Crigler-Najjar and Gilbert syndromes (unconjugated conjugated with Crigler-Najjar and Gilbert syndromes (unconjugated conjugated New nucleic acid representing polymorphisms in the human uridine diphosphate glucuronosyltransferase gene, used for diagnosis and corresponding protein (or its fragments) or to generate trans animals or modified cells e.g. for pharmacogenetic screening. Examples; Page 43-44; 63pp; English. evaluation of drug metabolism -WPI; 2000-052981/04. P-PSDB; AAY57100

Sequence 735 BP; 189 A; 179 C; 187 G; 180 T; 0 other;

0; Gaps 1054 acgatacttgttaagtggctaccccaaaacgatctgcttggtcacccgatgaccgtgcc 1113 1114 tttatcacccatgctggttcccatggtgtttatgaaagcatatgcaatggcgttcccatg 1173 1174 gtgatgatgccttgtttggtgatcagatggacaatgcaaagcgcatggagactaaggga 1233 1234 gotggagtgaccotgaatgttotggaaatgacttotgaagatttagaaaatgototaaaa 1293 1294 gcagtcatcaatgacaaaagttacaaggagaacatcatgcgcctctccagccttcacaag 1353 1354 gacccccggtggagccgctggacctggcgtgttctgggtggatttgtgatgaggcac 1413 301 gigatgatgatgccttgtttggtgatcagatggacaatgcaaagcgcatggagactaaggga 360 481 gaccgcccggtggagccgctggacctggccgtgttctgggtggagtttgtgatgatgaggcac 540 181 acgatacttgttaagtggctaccccaaaacgatctgcttggtcacccgatgacccgtgcc 240 361 gctgcagtgaccctgaatgttctggaaatgacttctgaagatttagaaaatgctctaaaa 420 934 tcaatggtctcagaaattccagagaagaagctatggcaattgctgatgctttgggcaaa 993 Query Match 31.7%; Score 735; DB 21; Length 735; Best Local Similarity 100.0%; Pred. No. 1.7e-198; Matches 735; Conservative 0; Mismatches 0; Indels ð 8 8 ò ò g g ð ò 8 g õ ò g ò 셤

```
Nucleotide sequences AAZ45110-245118 are exons 1A-1J of the human uridine diphosphate-glucuronosyltransferase 1 (UGT1) gene. The UGTs are a family of enzymes that catalyse the glucuronic acid conjugation of a wide range of endogenous and exogenous substrates including phenols.

I cange of endogenous and exogenous substrates including phenols, alcohols, amines and fatty acids. Many of the reactions catalysed by UGTs alcohols, amines and fatty acids. Many of the reactions catalysed by UGTs catalyte and are excreted. The invention relates to and identifies UGT1 polymorphisms (AAZ45004-Z45041). The polymorphisms sequences are useful as probes for detecting UGT1 locus polymorphisms, indicative of altered UGT1 expression or activity. These polymorphisms are associated with Crigler-Najjar and Gilbert syndromes (unconjugated cated UGT1 expression or activity. These polymorphisms are associated with Crigler-Najjar and Gilbert syndromes (unconjugated cated to predict the rate of metabolism of UGT1 substrates, possible frug-drug interactions and adverse side effects (i.e. to optimize drug closed), and to screen for diseases caused by exposure to toxins and to study the effects of polymorphisms, on enzymatic activity. The UGT1 corresponding protein (or its fragments) or to generate transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Uridine diphosphate-glucuronosyltransferase 1; UGT1; polymorphism; probe; glucuronic acid; Crigler-Najjar syndrome; Gilbert syndrome; jaundice; unconjugated hyperbilirubinaemia; drug metabolism; transgenic animal;
                                                                                                                                                                               1534 tgttgtgct;atggctaccggaaatgcttggggaaaaagggcgagttaagaaagcccac 1593
1414 aagggegegececactgegeeeeggaeeeaegaeeteaeetggtaeeagtaeeattee 1473
                                                                                       1474 ttggacgtgattggtttcctcttggccgtcgtgctgacagtggccttcatcacctttaaa 1533
                                                                                                              541 aagggcgcgccacacctgcgccccgcagcccacgacctcacctggtaccagtaccattcc 600
                                                                                                                                                                                                                            661 tgttgtgcttatggctaccggaaatgcttggggaaaaagggcgagttaagaaagcccac 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UDP-glucuronosyltransferase 1 (UGT1) exon lJ nucleotide sequence.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New nucleic acid representing polymorphisms in the human uridine diphosphate glucuronosyltransferase gene, used for diagnosis and
                    pharmacogenetic screening; diagnose; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Examples; Page 42; 63pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               evaluation of drug metabolism
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0084807.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             99WO-US09702.
                                                                                                                                                                                                                                                                                                                                                                                                                                    AAZ45117 standard; DNA; 759
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           28-FEB-2000 (first entry)
                                                                                                                                                                                                                                                                         1594 agatccaagacccat 1608
                                                                                                                                                                                                                                                                                                                      721 aaatccaagacccat 735
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (AXYS-) AXYS PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2000-052931/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Penny L, Galvin M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; AAY57099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9957322-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             04-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   11-NOV-11999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA245117;
                                                                                                                                                                                                                                                                                                                                                                                         RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                AA245117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                         g
```

```
Uridine diphosphate-glucuronosyltransferase 1; UGT1; polymorphism; probe; glucuronic acid; Crigler-Najjar syndrome; Gilbert syndrome; jaundice; unconjugated hyperbilirubinaemia; drug metabolism; transgenic animal;
UDP-glucuronosyltransferase 1 (UGT1) exon 1G nucleotide sequence.
                                                                                                                                                                                                                                                                                                pharmacogenetic screening; diagnose; ss.
```

Homo sapiens.

W09957322-A2.

11-NOV-1999.

99WO-US09702 04 - MAY - 1999;

98US-0084807. 07-MAY-1998;

(AXYS-) AXYS PHARM INC.

Penny L, Galvin M;

WPI; 2000-052981/04. P-PSDB; AAY57097 New nucleic acid representing polymorphisms in the human uridine diphosphate glucuronosyltransferase gene, used for diagnosis and evaluation of drug metabolism

Examples; Page 37-38; 63pp; English.

uridine diphosphate-glucuronsyllransferase I (UGTI) gene. The UGTS are a family of enzymes that catalyse the glucuronic acid conjugation of a wide range of endogenous and exogenous substrates including phenols, alcohols, amines and fatty acids. Many of the reactions catalysed by UGTS acidlobls, amines and fatty acids. Many of the reactions catalysed by UGTS result in toxic substances being converted to compounds which are more water soluble and are excreted. The invention relates to and identifies UGTI polymorphism (AAA45004-X45041). The polymorphism sequences are useful as probes for detecting UGTI locus polymorphisms, indicative of altered UGTI expression or activity. These polymorphisms are associated with Crigler-Najjar and Gilbert syndromes (unconjugated the UGTI gene to predict the rate of metabolism. The genotyping of the UGTI gene to byte to predict the rate of metabolism of UGTI substrates, possible crud-drug interactions and adverse side effects (i.e. to optimize drug dosage), and to screen for diseases caused by exposure to toxins and to study the effects of polymorphisms on enzymatic activity. The UGTI sequences, including polymorphisms, can also be used to produce the corresponding protein (or its fragments) or to generate transgenic animals or modified cells e.g. for pharmacogenetic screening. Nucleotide sequences AA245110-245118 are exons 1A-1J of the human

Sequence 951 BP; 229 A; 211 C; 214 G; 297 T; 0 other;

```
139 atgaggtcggtggtggagaaactcattctcagggggcatgaggtggttgtagtcatgcca 198
                                                                                                                                                                                                                                                                                                                                         121 atgoagtoggtggtggagaaactcatcctcagggggcatgaggtggtcgtagtcatgcca 180
                                                                                                                                                                                                                                                                                                                                                                                         199 gaggigagitggcaacigggaagaicacigaatigcacagigaagacitaticaaciica 258
                                                                                                                                                                                                                                                                                                                                                                                                                                        181 gaggtgagttggcaactgggaagatcactgaattgcacagtgaagacttactcaacctca 240
                                                  0; Gaps
                                                                                              1 atggctcgtgcagggtggactggcttccctatatgtgtgtctactgctgacctgt 60
Query Match 31.9%; Score 741.2; DB 21; Length 951; Best Local Similarity 90.5%; Pred. No. 3.5e-200; Matches 791; Conservative 0; Mismatches 83; Indels 0;
                                                                                                                                              g
                                                                                                                                                                                           δ
                                                                                                                                                                                                                                        a
                                                                                                                                                                                                                                                                                          Ω
                                                                                                                                                                                                                                                                                                                                    g
```

```
Uridine diphosphate-glucuronosyltransferase 1; UGT1; polymorphism; probe; glucuronic acid; Crigler-Naijar syndrome; Glibert syndrome; jaundice; unconjugated hyperbilirubinaemia; drug metabolism; transgenic animal; pharmacogenetic screening; diagnose; ss.
319 caagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttattt 378
                                                                                                                                        379 ttttcaaattgcaggagtttgtttaaagacaaaaattagtagaatacttaaaggagagt 438
                                                                                                                                                                         361 ttttcaaattgcaggagtttgtttaatgaccgaaaattagtagaaatacttaaaggagagt 420
                                                                                                                                                                                                           439 tettttgatgeagtgtttetegateettttgataaetgtggettaattgttgeeaaatat 498
                                                                                                                                                                                                                                            421 tgttttgatgcagtgtttctcgatccttttgatcgctgtggcttaattgttgccaaatat 480
                                                                                                                                                                                                                                                                              499 tteteceteceetecgtggtettegecaggggaataetttgecaetatettgaagaaggt 558
                                                                                                                                                                                                                                                                                                                                                                                                                    619 atgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatgc 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       679 caccgttttttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttacg 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         661 ccctattttttcaaaaatgtcttagaaatagcctctgaaattctccaaacccctgtcacg 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           739 gagtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttggac 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            721 gcatatgatctctacagccacacatcaatttggttgttgcgaactgactttgttttggag 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              799 tatcccaaacccgtgatgcccaacatgatcttcattggtggtatcaactgccatcaggga 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           UDP-glucuronosyltransferase 1 (UGT1) exons 2-5 nucleotide sequence.
                                                                                                                                                                                                                                                                                                                                                   559 gcacagtgccctgctcctctttcctatgtccccagaattctttaggggttctcagatgcc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 859 aagccgttgcctatggaatttgaagcctacatta 892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 841 aagccagtgcctatggtaagttatctccccttta 874
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ45118 standard; DNA; 735 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     99WO-US09702
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         28-FEB-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (AXYS-) AXYS PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Penny L, Galvin M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9957322-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-MAY-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    11-NOV-1999.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          엄
                                                                                                    g
                                                                                                                                                                       g
                                                                                                                                                                                                           δŏ
                                                                                                                                                                                                                                            쉄
                                                                                                                                                                                                                                                                            ŏ
                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
```

÷;

```
Nucleotide sequences AA245110-245118 are exons 1A-1J of the human uridine diphosphate-glucuronosyltransferase 1 (UGT1) gene. The UGTs are a family of enzymes that catalyse the glucuronic acid conjugation of a wide rame of enadogenous and exademous substrates including phenols.

I cange of enadogenous and exogenous substrates including phenols, alcohols, amines and fatty acids. Many of the reactions catalysed by UGTS caresult in toxic substances being converted to compounds which are more water soluble and are excered. The invention relates to and identifies UGT1 polymorphisms (AA245004-245041). The polymorphisms sequences are useful as probes for detecting UGT1 locus polymorphisms are associated with Crigler-Najjar and Gilbert syndromes (unconjugated caltered UGT1 expression or activity. These polymorphisms are associated with Crigler-Najjar and Gilbert syndromes (unconjugated competitutulaneman) and drug metabolism of UGT1 substrates, possible cared to predict the rate of metabolism of UGT1 substrates, possible cared cury and to screen for diseases caused by exposure to toxins and to study the effects of polymorphisms can also be used to produce the corresponding prolymorphisms, can also be used to produce the corresponding protein (or its fragments) or to generate transgenic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Uridine diphosphate-glucuronosyltransferase 1; UGT1; polymorphism; probe; glucuronic acid; Crigler-Najjar syndrome; Glibert syndrome; jaundice; unconjugated hyperbilirubinaemia; drug metabolism; transgenic animal; pharmacogenetic screening; diagnose; ss.
                                                            2211 tgagaagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaaaataca 2270
                                                                                    601 catatgatttcttgctttggggaaaaagaatgatgctatgaaattggtggtggtgtatt 660
                                                                                                                                                                                                                                                                                                                                                                                                                               UDP-glucuronosyltransferase 1 (UGT1) exon 1H nucleotide sequence.
New nucleic acid representing polymorphisms in the human uridine diphosphate glucuronosyltransferase gene, used for diagnosis and evaluation of drug metabolism -
                                                                                                                                              2271 gctatgaagtgctgggcaagtttactttttttctgatgtttcctacaact 2320
                                                                                                                                                                     Examples; Page 39-41; 63pp; English.
                                                                                                                                                                                                                                                                                                 AAZ45116 standard; DNA; 930 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98US-0084807.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99WO-US09702.
                                                                                                                                                                                                                                                                                                                                                                                   28-FEB-2000 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (AXYS-) AXYS PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI: 2000-052981/04.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Penny L, Galvin M;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              P-PSDB; AAY57098
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               04-MAY-1939;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             W09957322-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-MAY-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       11-NOV-1999.
                                                                                                                                                                                                                                                                                                                                              AAZ45116;
                                                                                                                                                                                                                                                                          AAZ45116
```

animals or modified cells e.g. for pharmacogenetic screening.

Sequence 930 BP; 228 A; 205 C; 212 G; 285 T; 0 other;

```
199 gaggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttca 258
                                                                                                                                                                                                                                                                                                                                                                                                                                               319 caagtacgaagtatatattctctattaatgggttcatacaatgacatttttgacttattt 378
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                439 tettttgatgcagtgtttetegateettttgataaetgtggettaattgttgecaaatat 498
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                 139 atgaggtcggtggtggagaaactcattctcaggggggcatgaggtggttgtagtcatgcca 198
                                                                                                                                                                                                                                             181 gaggtgagttggcaactgggaaaatcactgaattgcacagtgaagacttactcaacctca 240
                                                                                                                                                                                                                                                                                                                                                                          259 tataccctggaggatctggaccgggagttcaaggcttttgcccatgctcaatggaaagca 318
                                                                                                                                                                                                                                                                                                                                                                                                            241 tacactotggaggatotggaccgggaattcatggatttcgccgatgctcaatggaaagca 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     301 caagtacgaagtttgttttctctatttctgagttcatccaatggtttttttaacttattt 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       379 ttttcaaattgcaggagtttgtttaaagacaaaaattagtagaatacttaaaggagagt 438
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             421 tcttttgatgcggtgtttcttgatccttttgatgcctgtgcgttaattgttgccaaatat 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          499 ttotccctcccctccgtggtcttcgccaggggaatactttgccactatcttgaagaaggt 558
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 559 gcacagtgccctgctcctcttcctatgtccccagaattctcttagggttctcagatgcc 618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   619 atgactttcaaggagaggagtacggaaccacatcatgcacttggaggaacatttattatgc 678
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             679 caccgitititcaaaaatgccctagaaatagccictgaaattciccaaacaccigitacg 738
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    661 cagtatttttccaaaaatgccctagaaatagcctctgaaattctccaaacacctgtcaca 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        739 gagtatgatctctacagccacacatcaatttggttgttgcgaacggactttgttttggac 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              721 gcatatgatctctacagccacacatcaatttggttgttgcgaacagactttgttttggac 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 799 tatcccaaacccgtgatgcccaacatgatcttcattggtggtatcaactgccatcaggga 858
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     781 tatcccaaacccgtgatgcccaatatgatcttcattggtggtatcaactgccatcaggga 840
                                                                        33.0%; Score 766.6; DB 21; Length 930; 91.6%; Pred. No. 2.1e-207;
                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         859 aagccgttgcctatggaatttgaagcctacattaatgcttctgga 903
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           841 aagccattgcctatggtaagtcacctctcctttagcacattagga 885
                                      74;
                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAZ45115 standard; DNA; 951 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               28-FEB-2000 (first entry)
                                      Matches 811; Conservative
                    Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAZ45115;
    Query Match
                                                                          à
                                                                                                            셤
                                                                                                                                                                                   a
                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  유
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                 à
                                                                                                                                                                                                                         à
                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NAX EX
```

```
flavin containing monooxygenase; FMO; gamma-glutamyltransferase 5; dipeptidase, DP; glucose 6-phosphate dehydrogenase; 66DH; haplotype; phosphogluconate dehydrogenase; PGPH; drug metabolism; phenotype; uridine diphosphate glucoronosyl transferase; UGT2; asthma; hepatoxicity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human UGT1A7 related DNA containing a biallelic polymorphism SEQ ID 296.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequences AAH51110-AAH51593 represent human DNA fragments which contain
                                                                                                 2010 aattgatccttaaccaataatggtcagtcctcatctctgtcctgcttcataggtgccacc 2069
                                    980 aattgatccttaaccaataatggtcagtcctcatctctgtcgtgcttcataggtgccacc 1039
                                                                                                                                                                                                  1100 ttggagtgcactgagaacagcatatgatttcttgctttggggaaaaagaatgatgctatg 1159
                                                                                                                                                                                                                                                                                1160 aaattggtggtggtgtagtgaatgaatgaatggcttggagtgcactgagaacagcata 1219
                                                                                                                                                                                                                                                                                                                       2155 tgatttcttgctttgggggaaaaaagaatgatgctatgaaattggtggtggtgtatttgag 2214
                                                                                                                                                                                                                                                                                                                                                            2215 aagataatcattgcttatgtcaaatggagctgaatttgataaaaaacccaaaatacagcta 2274
                                                                                                                                                                                                                                                                                                                                                                                                                                          1280 aagataatcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagcta 1339
                                                                                                                                                                                                                                           2113 ---------gtgaaatgaatgaatggct1ggagtgcactgagaacagcata 2154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human; biallelic marker; single nucleotide polymorphism; SNP; MGSTII;
microsomal glutathione S-transferase II; malate decarboxylase enzyme;
DMEL; MEI; cytochrome P450; glutathione reductase; GSHR; GSHS; GGT5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 biallelic markers. The sequences are related to various human genes including microsomal glutathione S-transferase II (MGSTII), malate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Polynucleotides comprising sequences from malate decarboxylase enzyme-related biallelic markers used for genotyping -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Blumenfeld M, Bougueleret L, Chumakov I, Cohen-Akenine A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2275 tgaagtgctgggcaagtttacttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1340 tgaagtgctgggcaagtttactttttttctgatgtttcctacaact 1385
                                                                           2070 ttgtgtgtttaaagaagggaagctttgtacctttagagtgtag--
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 13; Page 488-489; 673pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAH51405 standard; DNA; 1001 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      24-MAR-2000; 2000WO-IB00403.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               990S-0126269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 99US-0131961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    29-AUG-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 2000-638353/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200058508-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (GEST ) GENSET.
                                                                                                                                                             2113 -----
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               zileuton: ds.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               05-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                    셤
                                                                                                                                                                                                셤
                                                                             ò
                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                          셤
                                                                                                                                                                                                                                                                                                                                                                                                                                       셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
reductase/synthase (MEMICARI), cyrontrone 490.9 quitarinone cacarboxylase will alwayse (DMEL/MEL) is procurated by 190 quitarinone dehydrogenase (FORD), glucose 6-phosphate dehydrogenase (FORDH), phosphogluconate dehydrogenase (FORDH), and uridine diphosphate algoromosyl transferases (UGT2). Each of these sequences contains a bialielic marker/polymorphism, which is represented in the sequence as a degenerate/undefined base. The genes to which the bialielic marker containing sequences are related are involved in drug metabolism. Sequences AAR51594 - AAR51594 - FAR51594 - AAR51594 - AAR51596 are MGSTII gene and four alternative MGSTII cDNA sequences. AAR62906 are MGSTII gene products. PCR primers AAR51599 and AAR51600 are used in an example for the amplification of human genomic band are sequence. Invention includes a method of genotyping comprising determining the identity of a nucleotide at a DME- or MGSTII-related biallelic marker in a biological sample. The method is used to determine the frequency in a biological sample for inclusion in a clinical trial of a drug treatment. The method is also used to detect association between allele cand phenotype, and to detect association between allele cand phenotype, and phenotype, and the detect association between allele cand phenotype, and the detect association assays, sequencing assays or allele specific amplification assays. The method is used to a set is a trisk of developing determine whether an individual suffers or is a trisk of developing
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1551 ccggaaaatgettgggggaaaaaagggcgagttaagaaaggcccacaaaatccaagacccattg 1610
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1851 attiticagaggacgigcagacaggciggcatictagattactitictiacicigaaaca 1910
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             tggcctgtttgggagtgcgggattcaaaggtggtccaccgctgccctactgcaaatgg 1970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2091 gctttgtacctttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacag 2150
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1611 agaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaacttga 1670
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1671 aaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcataaattaa 1730
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1731 tcagccccagagtgctttaaaaaattctcttaaataaaaataatagactcgctagtcagt 1790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1971 cagttittaatottatottittggottotgoagatggttgoaattgatoottaaccaataat 2030
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2031 ggicagicotoalototgicotgoticalaggigocacotigigititaaagaagggaa 2090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2151 catatgatttettgetttggggaaaaagaatgatgetatgaaattggtggtggtgtatt 2210
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           61 agaagtgggtgggaaataaggtaaaattttgaaccattccctagtcatttccaaacttga 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           361 tggcctgtttgggagtgcgggattcaaaggtggtcccaccgctgcccctactgcaaatgg 420
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     541 gctttgtacctttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacag 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       121 aaacagaatcagtgttaaattcattttattcttattaaggaaatactttgcataaattaa 180
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               421 cagittitaaicttaictittggcitcigcagaiggitgcaaitgaiccitaaccaataai 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 ccggaaatgcttggggaaaaagggcgagttaagaaagcccacaaaatccaagacccattg 60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             asthma or is at risk of developing hepatoxicity on treatment with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 769.6; DB 21; Length 1001; pred. No. 3e-208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0;
decarboxylase enzyme (DME1/ME1), cytochrome P450, glutathione
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 1001 BP; 315 A; 169 C; 205 G; 311 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              33.2%;
99.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches 769; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              zileuton
  88888888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ద
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ద
```

```
/*tag= c
/note= "encodes part of transferase C-terminal; see CC"
                                                              2230 tatgicaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgctgggcaa 2289
                      2050 cctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacctttagagtg 2109
                                                                                                             2170 ggganaaagaatgatgctatgaaattggtggtggtgttatttgagaagataatcattgct 2229
                                 781 tatgicaaaiggagcigaaittgataaaaacccaaaatacagctaigaagigcigggcaa 840
                                                                                                                         541 tggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgt 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  the sequences
                                                                                                                                                                                                                                                                                                                                                                              UGT1A; UG71BP; UGT1C; UGT1D; UGT1E; UGT1F; isozyme; bilirubin;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Isolated gene locus UGT1, DNA segments and diagnostic probes for diagnosing Gilbert's disease and Crigler-Najjar syndrome types I and II
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 non-sequenced DNA between the sequen represented in AAQ33026 and AAQ33027
                                                                                                                                                                                                                                                                                                                                                                                                                                                          /*tag= a
/note= "representation of 3.3 kbp of
                                                                                                                                                                                                     2290 gtttactttttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                 (USSH ) US DEPT HEALTH & HUMAN SERVICE.
                                                                                                                                                                                                                                                                                                                                                                                        UDP-glucuronosyl transferase; CN; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                     Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Fig 11; 99pp; English.
                                                                                                                                                                                                                                                                                                                                                       Exon 5 from the UGT1 gene locus.
                                                                                                                                                                                                                                                                                   AAQ33027 standard; DNA; 1667 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 '*tag= b
'label= Exon_5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    92WO-US00282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           91US-0639453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1389..1394
                                                                                                                                                                                                                                                                                                                               27-JAN-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      . 1402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       . 586
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Owens IS, Ritter JK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1992-284593/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        P-PSDB; AAR30166
                                                                                                                                                                                                                                                                                                                                                                                                              Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10-JAN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-AUG-1992.
                                                                                                                                                                                                                                                                                                            AAQ33027;
                                                                                                                                                                                                                                                                                                                                                                                                                                              misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       misc_RNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      exon
                                                                                                                                                                                                                                                                         AAQ33027
                                                                                                                                                                                                                                                           RESULT
                    ŏ
                                                                                   a
                                                                                                            ŏ
                                                                                                                               g
                                                                                                                                                       õ
                                                                                                                                                                              g
                                                                                                                                                                                                   ó
                                                                                                                                                                                                                         g
```

```
1291 aaagcagtcatcaatgacaaaagttacaaggagaacatcatgcgcctctccagccttcac 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1351 aaggaccgcccggtggagccgctggacctggccgtgttctgggtggagtttgtgatgagg 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           cacaagggcjcgccacacctgcgcccgcagcccacgacctcacctggtaccagtaccat 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1650 cctagicatitccaaactigaaaacagaatcagigitaaattcatittattctiattaag 1709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1471 tecttggaegtgattggttteetettggeegtegtget-gaeagtggeetteateaeett 1529
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1590 ccacaaatccaagacccattgagaagtgggtgggaaataaggtaaaattttgaaccattc 1649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1770 ataatagactcgctagtcagtaaagatatttgaatatgtatcgtgcccctccggtgtct 1829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1890 tactiticitacicigaaacatggcctgittgggagigcgggaticaaaggiggiccac 1949
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    267 aacgaaactjicttigigittagitacaaggagaacaicaigcgcctctccagccticac 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    327 aaggaccgcccggtggagccgctggacctggccgtgttctgggtggagtttgtgatgagg 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   cacaagggcycgccacactgcgccccgcagcccacgacctcacctggtaccagtaccat 446
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 744 ataatagactcgctagtcagtaaagatatttgaatatgtatcgtgcccctctggtctct 803
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels 103; Gaps
                                                                                      (2) Exon 2, represented in AAQ33025;
(3) Exon 3, represented in AAQ33026;
(4) Exon 4, represented in AAQ33026;
(5) Exon 5, represented in AAQ3026;
(5) about 69 kb of non-sequenced DNA.
Six unique N-termini of 286-289 amino acids are encoded by the six different first exons and identical C-termini of 246 amino acids are encoded by the common exons 2-5. The UGTI gene locus encodes a family of UDP-glucuronosyl transferase isozymes, two of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             cctagtcatttcc-aacttgaaaacagaatcagtgttaaattcattttattcttattaag
                 The isolated gene locus, UGT1, has a sequence of about 10000 bp which represent (1) Exon 1, comprising 6 transcriptional units (UGT1F, E, D, C, BP and A), represented in AAQ27368 and
                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1667;
                                                                                                                                                                                                                                                                                                   Patients having Crigler-Najjar Syndrome (CN) Type I, have a mutation present in the second common exon.
                                                                                                                                                                                                                                                                                                                                                               Sequence 1667 BP; 487 A; 316 C; 370 G; 474 T; 20 other;
                                                                                                                                                                                                                                                                                                                                                                                                                           34.4%; Score 798; DB 13;
89.1%; Pred. No. 3.4e-216;
tive 0; Mismatches 20;
                                                                                                                                                                                                                                                                             which metabolise bilirubin.
                                                                        AAQ33020-24 respectively;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches 1003; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                              Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 387
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        a
```

```
1922 ggagtgcgggattcaaaggtggtcccaccgctgcccactgcaaatggcagttttaatc 1981
                                                                                                                                                                      1982 ttatctttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctc 2041
                                                                                                                                                                                                                                                                   2042 atctctgtcttgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacct 2101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2222 tcattgottatgtcaaatggagotgaatttgataaaaaacccaaaatacagotatgaagtg 2281
                                                                                                                                                                                                                                                                                                                                                                    2102 ttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgatttc 2161
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       601 ggagtgcgggattcaaaggtggtcccaccgctgccctactgcaaatggcagttttaatc 660
                                                                                                                                                                                                                   661 ttatcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctc 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  901 tcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtg 960
                     541 gacgigcagacaggciggcattciagatiactititititacicigaaacaiggccigitig 600
2282 ctgggcaagtttacttttttctgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   961 ctgggcaagtttactttttttctgatgtttcctacaact 999
                                                                                                                                                                                                                                                                 ŏ
                                                                                                                                                                                                                                                                                                              QQ
                                                                                                                                                                                                                                                                                                                                                                                                               Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
```

Human, biallelic marker; single nucleotide polymorphism; SNP; MGSTII; malter decarboxylase enzyme; microsomal glutathione S-transferase II; malter decarboxylase enzyme; DMEI; MEI: cytochrome P450; glutathione reductase; GSHR; GSTF; flavin-containing monooxygenase; FMO; gamma-glutamyltransferase 5; dipeptidase; DP; glucose 6-phosphate debydroqenases; GSPBH; haplotype; phosphogluconate debydrogenase; PGHB; drug metabolism; phenotype; uridine diphosphate glucoronosyl transferase; UGT2; asthma; hepatoxicity; Human UGT1A7 related DNA containing a biallelic polymorphism SEQ ID 295. AAH51404 standard; DNA; 1001 BP. 29-AUG-2001 (first entry) AAH51404;

WO200058508-A2.

05-OCT-2000.

zileuton; ds.

24-MAR-2000; 2000WO-IB00403.

(GEST) GENSET

99US-0131961

30-APR-1999;

Blumenfeld M, Bougueleret L, Chumakov I, Cohen-Akenine A; WPI; 2000-638353/61.

Claim 13; Page 487-488; 673pp; English.

Polynucleotides comprising sequences from malate decarboxylase enzyme-related biallelic markers used for genotyping -

1990 tggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatctctgt 2049

Sequences AAH51110-AAH51593 represent human DNA fragments which contain biallelic markers. The sequences are related to various human genes including microsomal glutathione S-transferase II (MGSTII), malate decarboxylase enzyme (DMEI/MEI), cytochrome P450, glutathione reductase/synthase (GSHR/GSHS), flavin-containing monooxygenase (FWO), gamma-glutamyltransferase 5 (GGTS), dipeptidase (DP), glucose 6-phosphate diphosphate glucoronosyl transferases (UGT2). Each of these sequences contains a biallelic marker/polymorphism, which is represented in the sequence as a degenerate/undefined base. The genes to which the biallelic marker containing sequences are related are involved in drug metabolism. Sequences AAH51594 - AAH51598 represent the genomic sequence of the MGSTII gene products. PCR primers APH51599 and AAH51600 are used in an example for the amplification of human genomic NA fragments. The a biological sample. The method is used to determine the frequency in population of an allele of a DMF or MGST-II related biallelic marker and to select an individual for inclusion in a clinical trial of a drug treatment. The method is also used to detect association between allele and phenotype, and to detect association between haplotype and phenotype. The polynucleotides are used, in hybridization assays, sequencing assays or allele specific amplification assays. The method can be used to determine whether an individual suffers or is at risk of developing asthma or is at risk of developing hepatoxicity on treatment with invention includes a method of genotyping comprising determining the identity of a nucleotide at a DME or MGSTII-related biallelic marker in 888888888888888888888888888888888

Sequence 1001 BP; 293 A; 171 C; 210 G; 326 T; 1 other;

1510 acagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaa 1569 1630 ggtaaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgttaaa 1689 1690 ttcattttattcttattaaggaaatactttgcataaattaatcagccccagagtgcttta 1749 1750 aaaaattetetttaaataaaaaataatagaettegettagteagtaaagatatttgaatatgta 1809 1870 gacaggctggcattctagattactttcttactctgaaacatggcctgtttgggagtgcg 1929 1930 ggattcaaaggtggtcccaccgctgccctactgcaaatggcagttttaatcttatcttt 1989 1450 ctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctg 1509 61 acagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgggggaaa 120 181 ggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgttaaa 240 301 aaaaattotottaaataaaaataatagaotogotagtoagtaaagatatttgaatatgta 360 241 ttcattttattcttattaaggaaatactttgcataaattaatcagccccagagtgcttta 300 0; Gaps 1 ctcacctggtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctg 60 Score 870.6; DB 21; Length 1001; Pred. No. 5.6e-237; 1; Mismatches 0; Indels 0; 37.5%; 99.9%; Best Local Similarity 99.93 Matches 870; Conservative Query Match õ g g δ qq ö qq ö q ò q ŏ ōλ qq g

```
flavin-containing monooxygenase; FMO: gamma-glutamyltransferase 5; dipeptidase; DP; glucose 6-phosphate dehydrogenase; G6PDH; haplotype; phosphogluconate dehydrogenase; PGDH; drug metabolism; phenotype; uridine diphosphate glucoronosyl transferase; UGT2; asthma; hepatoxicity;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human UGT.LA7 related DNA containing a biallelic polymorphism SEQ ID 294.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15227 gctgcccctactgcaaatggcagttttaatctttatcttttggcttctgcagatggttgca 15286
                                                                                                                                                                                                                                                                                                                                                            15407 tiggagigcacigagaacagcataigaiitciigciiigggaaaaagaaigaigciaig 15466
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15467 aaattggtggtggtgtatttgagaagataatcattgcttatgtcaaatggagctgaatt 15526
1891 acttttcttactctgaaacatggcctgtttgggaatgcggggattcaaaggtggtcccacc 1950
                                                                                                                                                                   gotgococtactgoaaatggoagttttaatcttatcttttggcttctgoagatggttgca 2010
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2191 aaattggtggtggtgtatttgagaagataatcattgcttatgtcaaatggagctgaatt 2250
                                                                                                                                                                                                                                                                                                                         2011 attgatccttaaccaataatggtcagtcctcatcttgtcctgcttcataggtgccacct 2070
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human; biallelic marker; single nucleotide polymorphism; SNP; MGSTII; microsomal glutathione S-transferase II; malate decarboxylase enzyme; DMEI; CYtochrome P450; glutathione reductase; GSHR; GSHS; GGT5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2131 ttggagtgcactgagaacagcatatgatttcttgctttggggaaaaagaatgatgctatg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Polynucleotides comprising sequences from malate decarboxylase enzyme-related biallelic markers used for genotyping .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Blumenfeld M, Bougueleret L, Chumakov I, Cohen-Akenine A;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 13; Page 487; 673pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAH51403 standard; DNA; 1001 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-MAR-2000; 2000WO-IB00403.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       99US-0126269
99US-0131961
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               29-AUG-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Db 15587 tcctacaact 15596
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2311 tectacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 2000-638353/61.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200058508-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GEST ) GENSET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25-MAR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             zileuton; ds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 05-OCT-2000.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAH51403;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A CONTRACTOR OF THE CONTRACT O
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
```

```
biallelic markers. The sequences are related to various human genes including microsomal glutathione S-transferase II (MCSTII), malate decarboxylase enzyme (DME1/ME1), cytochrome P450, glutathione reductase/synthase (GSHR/GSHS), flavin-containing monoxygenases (FWO), gamma-glutamyltransferase 5 (GGT5), dipeptidase (DP), glucose 6-phosphate dehydrogenase (GBDH), phosphogluconate dehydrogenase (FGDH), and uridine diphosphate glucoronosyl transferases (GGT2). Each of these sequences contains a biallelic marker/polymorphism, which is represented in the sequence as a degenerate/undefined base. The genes to which the biallelic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         are MGSTII gene products. PCR primers AAM51599 and AAM51600 are used in an example for the amplification of human genomic DNA fragments. The invention includes a method of genotyping comprising determining the identity of a nucleotide at a DNE- or MGSTII-related biallelic marker in a biological sample. The method is used to determine the frequency in population of an allele of a DNE- or MGSTII related biallelic marker and to select an individual for inclusion in a clinical trial of a drug treatment. The method is also used to detect association between allele and phenotype, and to detect association between hablotype and phenotype. The polynuclectides are used, in hybridization assays, sequencing assays or allele specific amplification assays. The method can be used to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      marker containing sequences are related are involved in drug metabolism. Sequences AAH51594 - AAH51598 represent the genomic sequence of the MGSTII gene and four alternative MGSTII cDNA sequences. AAB62905-AAB62906
Sequences AAH51110-AAH51593 represent human DNA fragments which contain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           determine whether an individual suffers or is at risk of developing asthma or is at risk of developing hepatoxicity on treatment with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                43.0%; Score 998.6; DB 21; Length 1001; 99.9%; Pred. No. 2.1e-273;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence 1001 BP; 269 A; 205 C; 233 G; 293 T; 1 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 2.1e-273;
1; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  zileuton.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Loca]
```

1322 agaacatcatgcgcctctccagccttcacaaggaccgccggtggagccgctggacctgg 1381 Matches 998; Conservative Query Match

ò

g

g ò g

1862 gacgigcagacaggciggcattciagattactiticitacicigaaacaiggccigitig 1921

```
Genotyping a human UDP glycosyltransferase 1 gene of an individual for determining the haplotype of an individual, involves determining the identity of a nucleotide pair at specific polymorphic sites for two
                                                                                                                                                 /product= "UDP glycosyltransferase 1"
/note= "This CDS is specifically claimed in claim
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /standard_name= "Single nucleotide polymorphism" replace (14971,C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /standard_name= "Single nucleotide polymorphism"
                                                                 /standard_name= "Single nucleotide polymorphism"
2616..14887
                                                                                                                                                                                                                                                                                 /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                              /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                           /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /standard_name= "Single nucleotide polymorphism" replace (10095,C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         /standard_name= "Single nucleotide polymorphism" replace (14423,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        /standard_name= "Single nucleotide polymorphism"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /standard_name= "Single nucleotide polymorphism" replace (14776,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Chew A, Choi JY, Koshy B, Rounds E;
Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     replace (10091,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            replace (10094,T)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             replace (10140,C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 replace (14713, T)
                                                                                                                                                                                                                                                                                                                replace (2826,A)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 replace (9508,C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             replace (9511,T)
                                                                                                                                                                                                                                replace (2756,T)
                                                                                                                                                                                                                                                                                                                                                                                          replace (3155,G)
                     replace (2510,C)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GENA-) GENAISSANCE PHARM INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13-APR-2001; 2001WO-US12273.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-APR-2000; 2000US-197514P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 2002-075063/10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      copies of the gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     P-PSDB; AAU10940
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO200179230-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25-OCT-2001.
  Key
variation
                                                                                                                                                                                                                                   variation
                                                                                                                                                                                                                                                                                                                variation
                                                                                                                                                                                                                                                                                                                                                                                          variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              variation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        variation
                                                                                                     CDS
```

```
cuseful for determining determining for the two copies of the UGTLA1) gene of an individual, involving determining for the two copies cof the UGTLA1 gene present in the individual, the identity of the nucleotide pair at one or more polymorphic sites. The new method is useful for determining whether an individual has a haplotype or haplotype or later, given in the specification. It is useful for improving the efficacy and reliability of several steps in the discovery and cativity, e.g., Gilbert's syndrome and Crider-Najjar syndrome, to validate UGTLA1 as a candidate agent for treating a specific condition or disease predicted to be associated with UGTLA1 activity, and in the casing of clinical trials of candidate dusps for treating a specific condition or disease predicted to be associated with UGTLA1 activity. The method is useful to screen for compounds targeting UGTLA1 activity. The method is useful to screen for compounds targeting UGTLA1 activity. The captesion and function of UGTLA1, and in expressing UGTLA1 protein for use in screening for candidate drugs to treat diseases related to UGTLA1 cativity. (1) or (11) is useful for their diseases related to UGTLA1 cativity. (1) or (11) is useful for therapeutic purposes. (11) or a cutvity. (1) or (11) is useful for treat diseases related to UGTLA1 cacominant organism compressing (11) is useful for therapeutic studying the compounds for Gilbert's syndrome and criginar whalpar syndrome, in a blological system. The present sequence of UBP glycosyltransferase 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14867 cacaaatccaagacccattgagaagtgggtgggaaataaggtaaaattttgaaccattcc 14926
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           14567 aacgaaactgtctttgtgtttagttacaaggagaacatcatgcgcctctccagccttcac 14626
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               14627 aaggaccgcccggtggagccgctggacctggccgtgttctgggtggagtttgtgatgagg 14686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1411 cacaagggcgccacacctgcgcccgcagcccacgacctcacctggtaccat 1470
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14687 cacaagggcgcccacacctgcgccccgcagcccacgacctcacctggtaccagtaccat 14746
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1471 tccttggacgtgattggtttcctcttggccgtcgtgctgacagtggccttcatcaccttt 1530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14747 tectiggaegtgattggttteetettggeegtegtgetgaeagtggeetteateaeettt 14806
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1291 aaagcagtcatcaatgacaaaagttacaaggagaacatcatgcgcctctccagcttcac 1350
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1351 aaggaccgcccggtggagccgctggacctggccgtgttctgggtggagtttgtgatgaggg 1410
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1591 cacaaatccaagacccattgagaagtgggtgggaaataaggtaaaattttgaaccattcc 1650
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1651 ctagtcatttccaaacttgaaaacagaatcagtgttaaattcattttattcttattaagg 1710
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match 43.3%; Score 1004.4; DB 24; Length 18887; Best Local Similarity 98.4%; Pred. No. 2.8e-274; Matches 1014; Conservative 0; Mismatches 16; Indels 0; Gs
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence 18887 BP; 5079 A; 4037 C; 4131 G; 5640 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                 8888888888888888888888888888888
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Qγ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
```

15047 taatagactogctagtcagtaaagatatttgaatatgtatcgtgcccctctggtgtctt 15106

taatagactcgctagtcagtaaagatatttgaatatgtatcgtgccccctccggtgtctt 1830

1771

q

The invention relates to genotyping a human UDP glycosyltransferase

Claim 21; Fig 1; 81pp; English.

to restore normal activity of (II) or to treat disease states involving (II). (II) is useful for generating antibodies against it, detecting or a food supplement. (II) and its binding partners are useful in medical langing of sites expressing (II). (I) and (II) are useful in medical disorders involving aberrant protein expression or biological activity. The polypectide and polynucleotide sequences have applications in dispnostics, forensics, gene mapping, identification of mutations and to produce other types of data and products dependent on DNA and no acid sequences. AASG4197-AAS94564 represent novel human diagnostic coding sequences of the invention.

Note: The sequence data for this patent did not appear in the printed specification, but was obtained in electronic format directly from WIPO ftp.wijo.int/pub/published_pct_sequences. 888888888888888888888

Sequence 1655 BP; 402 A; 388 C; 403 G; 462 T; 0 other;

ö 121 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 180 61 tglc=gctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120 165 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 224 181 giggiigtagicaigccagaggigagiigagiiggcaacigggaagaicacigaaiigcacagig 240 225 giggitigiagicalgocagaggigagitiggoaacigggaagaicacigaatigoacagig 284 285 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 344 301 catgotcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaat 360 421 gaatacttaaaggaggttettttgatgeagtgtttetegateettttgataaetgtgge 480 45 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 104 105 tgtc:gctgctgacctgtggctttgccgaggcagggaagctactggtagtgccatggat 164 141 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300 465 gaatacttaaaaggagagtteettttgatgeggtgttteettgateettttgatgeetgtgeg 524 481 ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 540 525 ttaatitgittgccaaatatttctccctcccttgtggtcttcgccaggggaataggttgc 584 601 ttagggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttg 660 645 ttagggttctcagatgccatgactttcaaggagagagagtacggaaccacatcatgcacttg 704 721 ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 780 0; Gaps 541 cactatcttgaagaaggtgcacagtgccctgctcctctttcctatgtccccagaattctc 600 661 gaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagctttgaaatt 720 1 ctcayctycayttctctyatgycttycacaygytygaccayccccttcctctatgtyty 60 66.9%; Score 1551.8; DB 23; Length 1655; 97.7%; Pred. No. 0; tive 0; Mismatches 37; Indels 0; (Matches 1574: Conservative Local Similarity Query Match ò ò 셤 ò g à OD à g õ a ò q ò g à 셤 g ò g ò

Homo sapiens.

961 aaagetatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtac 1020 1081 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggtcccatggt 1140 945 ggagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaag 1004 1005 aaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtgggcggtac 1064 1021 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaa 1080 1065 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctacccaa 1124 1141 gittaigaaagcataigcaaiggcgitcccaiggigaigaigccitigitiggigaicag 1200 1201 atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 1260 1245 atggacaatgcaaagcgcatggagactaagggagctggagtgacctgaatgttctggaa 1304 1261 atgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaag 1320 1321 gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg 1380 1381 gccgtgttctgggtggagtttgtgatgaggcacaagggcgccacacacctgcgccccgca 1440 1441 goccacgacotcacotggtaccagtaccattccttggacgtgattggtttcctcttggcc 1500 1501 gtcgtgctggccgttggtccttcatcaccctttaaatgttgtgcttatggctaccggaaatgc 1560 1125 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1184 1365 gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg 1424 1425 gccgtgttctgggtggagtttgtgatgatgaggcacaaggggcgccacacctgcgccccgca 1484 1545 gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc 1604 901 ggagaacatggaattgtggttttctcttttgggatcaatggtctcagaaattccagaag 960 765 ctccaaacacctgtcacagcatatgatctctacagccacacatcaatttggttgttgcga 824 841 atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900 885 atcaactgccatcagggaaagccattgcctatggaatttgaagcctacattaatgcttct 944 drug discovery: Gilbert's syndrome; Crigler-Najjar syndrome; ds. 1561 ttggggaaaaaagggcgagttaagaaagcccacaaaatccaagacccattga 1611 1605 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattga 1655 UDP glycosyltransferase 1; UGT1A1; human; haplotyping; DNA encoding UDP glycosyltransferase 1 (UGT1A1). AAS18543 standard; DNA; 18887 BP 12-MAR-2002 (first entry) AAS18543; 윤 ò 음 ò 셤 g ò ò g ò 셤 ò 셤 a ò a ö 윱 ò 윱 ò ö ò

Oy Db	828	agccgttgcctatggaatttgaagcctacattaatgcttctggagaacatggaattgt 91° 	
Qγ	881	agccactatctaggaatttgaagcctacattaatgcttctggagaacatggaattg	
QQ	918	ggttttottittgggatcaatggtctcagaaattccagagaagaagaagctatggcaattgc 977 	
Qy Db	978	tgatgetttgggcaaaateeeteagaeagteetgtggeggtaeaetggaaeeegaeeate 1037 	
Oy Dp	1038 1061	gaatottgogaacaacacgatacttgttaagtgoctaccccaaaacgatctgottggtca 1097 	
Qy Db	1098	cccgatgacccgtgcctttatcacccatgctggttcccatggtgtttatgaaagcatatg 1157 	
Qy Db	1158	caatggcgttcccatggtgatgatgccttgtttggtgatcagatggacaatgcaaagcg 1217 	
Qy Db	1218	catggagactaagggagctggagtgaccctgaatgttctggaaatgacttctgaagattt 1277 	
Oy Db	1278	agaaaatgctctaaaagcagtcatcaatgacaaaagttacaaggagaacatcatgcgcct 1337 	
Qy Db	1338	ctccagccttcacaaggaccgccggtggagccgctggacctggccgtgttctgggtgga 1397 	
Qy Dp	1398	gtttgtgatgaggcacaaggggcgcacacctgggccccgcagcccacgacctcacctg 1457 	
Qy Dp	1458	gtaccagtaccattccttggacgtgattggtttcctcttggccgtcgtgctgacagtggc 1517 	
Qy Db	1518	cttcatcacctttaaatgttgtgcttatggctaccggaaatgcttggggaaaaaagggcg 1577 	
Qy Dp	1578 1601	agttaagaaagcccacaaatccaagacccattgagaagtgggtgg	
Qy Db	1638 1661	tttgaaccattccctagtcatttccaaacttgaaaacagaatcagtgttaaattcatttt 1697 	
Sp GS	1698 1721	attottattaaggaaataotttgoataaattaatoagoocoogagtgotttaaaaaaato 1757 	
Qy Db	1758 1780	tottaaataaaaataatagaotogotagtoagtaaagatatttgaatatgtatogtgooo 1817 	
Qy Db	1818 1840	cctccggtgtctttgatcaggatgacatgtgccatttttcagaggacgtgcagacaggct 1877 	
Qy Dp	1878 1900	gcattctagattactttcttactctgaaacatggcctgtttgggagtgcgggattcaa 1937 	

```
The invention relates to isolated polynucleotide (I) and polypeptide (II) sequences. (I) is useful as hybridisation probes, polymerase chain reaction (PCR) primers, oligomers, and for chromosome and gene mapping, and in recombinant production of (II). The polynucleotides are also used in diagnostics as expressed sequence tags for identifying expressed genes. (I) is useful in gene therapy techniques
                                                                                                                                                                                                                                                                                                                   1998 geagatggttgcaattgatecttaaceaataatggtcagtectcatctctgtectgcttc 2057
                                                                                               2058 ataggtgccacc-ttgtgtgttttaaagaagggaagctttgtacctttagagtgtaggtga 2116
                                                                                                                                               2117 aatgaatgaatggcttggagtgcactgagaacagcatatgatttcttgctttggggaaaa 2176
                                                                                                                                                                                                                         2140 aatgaatgacttggagtgcactgagaacagcatatgatttcttgctttggggaaaa 2199
                                                                                                                                                                                                                                                         2177 agaatgatgctatgaaattggtggtggtgtgtttgagaagataatcattgcttatgtca 2236
                                                                                                                                                                                                                                                                                      2200 agaatgatgctatgaaattggtggtggtgtatttgagaagataatcattgcttatgtca 2259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human; chromosome mapping; gene mapping; gene therapy; forensic; food supplement; medical imaging; diagnostic; genetic disorder; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             New isolated polynucleotide and encoded polypeptides, useful in diagnostics, forensics, gene mapping, identification of mutations responsible for genetic disorders or other traits and to assess
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DNA encoding novel human diagnostic protein #27056.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Claim 1; SEQ ID No 27056; 103pp; English.
                                                                                                                                                                                                                                                                                                                                                                                   AAS91252 standard; cDNA; 1655 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tang YT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    31-MAR-2000; 2000US-0540217.
23-AUG-2000; 2000US-0649167.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-MAR-2001; 2001WO-US08631.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 13-FEB-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Drmanac RT, Liu C,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 2001-639362/73.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (HYSE-) HYSEQ INC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; ABG27065
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO200175067-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                biodiversity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-0CT-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAS91252;
                                                                                                                                                                                                                         qq
                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                      q
                                                                                                                                                                                                                                                                                                                                                                                      δλ
                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                             οy
                                                                                                                                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                                        q
```

```
1870 gtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttggga 1929
                    1925 gtgcgggattcaaaggtggtcccaccgctgccctactgcaaatggcagttttaatctta 1984
                                  1930 gtgcgggattcaaaggtggtccaccgctgccctactgcaatggcagttttaatctta 1989
                                                               1985 tottttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatc 2044
                                                                                    1990 tcttttggcttctgcagatggttgcaattgatccttaaccaataatggtcagtcctcatc 2049
                                                                                                                      2170 gctttggggaaaaagaatgatgctatgaaattggtggtggtgttttgagaagataatc 2229
                                                                                                           2045 tetgteetgetteataggtgecace.ttgtgtgtttaaagaagggaagetttgtaeettt 2103
                                                                                                                                                                                                                                          2224 attgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagtgct 2283
                                                                                                                                                                                                                                                      Isolated gene locus UGT1, DNA segments and diagnostic probes for diagnosing Gilbert's disease and Crigler-Najjar syndrome
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bilirubin; UDP-glucuronosyltransferase; HUGBr1; HUGBr2;
                                                                                                                                                                                                                                                                                   (USSH ) US DEPT HEALTH & HUMAN SERVICE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Location/Qualiflers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                monoglucuronide; diglucuronide; ss.
                                                                                                                                                                                                                                                                                                                                                               AAQ27370 Standard; cDNA; 2368 BP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92WO-US00282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      91US-0639453
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /rcag= c
/number= 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g= a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag= b
/number= 1
                                                                                                                                                                                                                                                                                                                                                                                                         27-JAN-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2355..2360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Owens IS, Ritter JK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1992-284593/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P-PSDB; AAR26154.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo saptens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 10-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .0-JAN-1951;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PolyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     W09212987-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           06-AUG-1992
                                                                                                                                                                                                                                                                                                                                                                                     AAQ27370;
                     ò
                                                                                  ద
                                                                                                                            g
                                                                                                          ö
                                                                                                                                                    ò
                                                                                                                                                                                              ò
                                                                                                                                                                                                                   유
                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                    ò
```

```
been isolated. They are referred to as HUGBI1 (AAQ27369) and HUGBI2 (AAQ27370) (Ritter, et al., J. Biol. Chen. 266:1043-1047 (1991)) and, upon expression individually in COS-1 cells, encode isoforms that catalyse the formation of the two bilirubin monoglucuronides and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             101 ctgggctgagagtggaaaggtgttggtggtgcccactgatggcagcccctggctcagcat 160
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                141 gaggteggtggtggagaaacteatteteagggggeatgaggtggttgtagteatgeeaga 200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               161 gcgggaggccttgcgggagctccatgccagaggccaccaggcggtggtcctcaccccaag 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    201 ggtgagttggcaactgggaagatcactgaattgcacagtgaagacttattcaacttcata 260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                221 aggigaataigcacatcaagaagagagaattiticacccigacagcciatgcigitccaig 280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    281 gacccagaaggaatttgatcgcgttacgctgggctacactcaagggttctttgaaacaga 340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     318 acaagtacgaagtatattctctattaatgggttcatacaatgacattttgacttatt 377
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       341 acatcttctyaagagatattctagaagtatggcaattatgaacaatgtatctttggccct 400
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           261 taccetggaggatetggacegggagtteaaggettttgeecatgeteat---ggaaage 317
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         378 tttttcaaattgcaggagtttgtttaaagacaaaaattagtagaatacttaaaggagag 437
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        401 tcataggtgttgtgtggagctactgcataatgaggccctgatcaggcacctgaatgctac 460
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            438 ttcttttgatgcagtgtttctcgatccttttgataactgtggcttaattgttgccaaata 497
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           521 cctgicgaticctgctgtgtttttttggaggtacattccatgtgacttagactttaaggg 580
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                558 tgcacagtgccctgctcctcttcctatgtccccagaattctcttagggttctcagatgc 617
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               581 cacacagigiccaaaicciiccicciaiaitcciaagiiaciaacgaccaaiicagacca 640
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     641 catgacattuctgcaaagggtcaagaacatgctctaccctctggccctgtcctacatttg 700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               618 catgactttcaaggagagagtacggaaccacatcatgcacttggaggaacatttattatg 677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          678 ccaccgttt:ttcaaaaatgccctagaaatagcctctgaaattctccaaacacctgttac 737
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         738 ggagtatga:ctctacagccacacatcaatttggttgttgcgaacggactttgttttgga 797
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             498 tttetecetecetecgtggtettegecaggggaataetttgecactatettgaagaagg
                                                                                                   Two human liver bilirubin UDP-glucuronosyltransferase cDNAs have
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 68.0%; Score 1576.8; DB 13; Length 2368; Best Local Similarity 82.3%; Pred. No. 0; Matches 1847; Conservative 0; Mismatches 392; Indels 5; (
                                                                                                                                                                                                                                                   The CDMAs contain identical 3' ends (1469 bp in length) to each other and to that of the human phenol transferase cDNA, HLUGP1 (Harding et al., Proc. Natl. Aca. Sci. USA 85:8281 (1988)). In contrast, they have unique 5' ends.
                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2368 BP; 609 A; 532 C; 566 G; 661 T; 0 other;
                                                    Disclosure, Fig 9A-I; 99pp; English.
                                                                                                                                                                                                                          the diglucuronide.
  types I and II
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    요
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         òχ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

Isolated gene locus UGT1, DNA segments and diagnostic probes - for diagnosing Gilbert's disease and Crigler-Najjar syndrome types I and II

Disclosure; Fig 9A-I; 99pp; English.

Two human liver bilirubin UDP-glucuronosyltransferase cDNAs have been isolated. They are referred to as HUGBr1 (AAQ27369) and HUGBr2 (AAQ27310) (Ritter, et al., J. Biol. Chem. 266:1043-1047 (1991)) and, upon expression individually in COS-1 cells, encode isoforms that catalyse the formation of the two bilirubin monoglucuronides and the diglucuronide.

The CDNAs contain identical 3' ends (1469 bp in length) to each other and to that of the human phenol transferase cDNA, HIUGPI (Harding et al., Proc. Natl. Aca. Sci. USA 85:8281 (1988)). In contrast, they have unique 5' ends.

Sequence 2351 BP; 602 A; 540 C; 556 G; 653 T; 0 other;

131 actggctgagcatgcttggggccatccagcagctgcagcagaggggacatgaaatagttg 190 188 tagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtgaagactt 247 191 tectageacetgaegectegttgtaeateagagaeggageattttaeacettgaagaegt 250 248 attcaacttcatataccctggaggatctggaccgggagtt--caaggcttttgcccatgc 305 251 accctgtgccattccaaagggaggatgtgaaagagtcttttgttagtctcgggcataatg 310 306 tcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaatgacat 365 311 tttttgagaatgattctttcctgcagcgtgtgatcaaaacatacaagaaaataaaaagg 370 366 ttttgact-tatttttttttcaaattgcaggagtttgtttaaagacaaaaattagtagaat 424 371 actotgctatgcttttgtctggctgttcccacttactgcacaacaaggagctcatggcct 430 425 acttaaaggagagttcttttgatgcagtgtttctcgatccttttgataactgtggcttaa 484 485 ttgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgccact 544 611 ctcattcagatcacatgaccttcctgcagcgggtgaagaacatgctcattgccttttcac 670 665 aacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaattctcc 724 128 actggttcaccatgaggtcggtggtggagaaactcattctcaggggggatgaggtggttg 187 545 atcttgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctcttag 604 605 ggttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttggagg 664 725 aaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcgaacgg 784 5; Gaps 68.2%; Score 1581.4; DB 13; Length 2351; 82.5%; Pred. No. 0; 0; Mismatches 391; Indels Matches 1861; Conservative Local Similarity Query Match g g g 8 Qγ 셤 οy g ŏ ò g Q ò g οy g οy ò OD ò οy

785 actttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggtatca 844

1211 acaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaaatga 1270 tgttctgggtggagtttgtgatgatgaggcacaagggcgccacacctgcgccccgcagcc 1444 1511 tgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1570 1685 ttaaattcattttattcttattaaggaaatactttgcataaattaatcagccccgagtg 1744 1691 ttaaattcattttattcttattaaggaaatactttgcat-aattaatcagccccagagtg 1749 1810 atgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcagaggac 1869 1865 gtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtttggga 1924 971 ctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactg 1030 1031 gaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1090 1085 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 1144 1091 atctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggtgttt 1150 1145 atgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcagatgg 1204 1151 atgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatcagatgg 1210 1205 acaatgcaaagcgcatggagactaagggagctggagttgaccctgaatgttctggaaatga 1264 1391 tgitictgggtggagititgtgatgaggcacaagggcgccacacctgcgccccgcagcc 1450 1445 acgacctcacctggtaccagtaccattccttggacgtgattggtttcctctttggccgtcg 1504 1805 tgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgcttgg 1564 1625 aataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatcagtg 1684 1745 ctttaaaaaaattctcttaaataaaaataatagactogctagtcagtaaagatatttgaat 1804 1750 ctttaaaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatatttgaat 1809 1805 atgtatcgtgccccctccggtgtctttgatcaggatgacatgtgccatttttcagaggac 1864 965 ctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtacactg 1024 1025 gaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaaaacg 1084 1265 cttctgaagatttagaaaatgctctaaaaggcagtcatgatgagaaagttagaagggagag1325 acatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctggccg 1384 791 actttgtgaaggattaccctaggcccatcatgcccaatatggtttttgttggtggaatca 850 851 actgoottoaccaaaatccactatcccaggaatttgaagcotacattaatgottotggag 910 845 actgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttctggag 904 Op οy qq QΩ ò g QQ ð δ g g ď g ŏ g οy g δ g g οy g ò ά g οy ð δ δ ğ

0 0	0 0	0 0	20	08	40	00	09	20	90	40		20	20	90	40	00	09
t - 1 1 84 84	η 9 9	96 6 96 6	c 10 c 10	a 10 a 10	t 11 t 11	9 12 9 12	a 12 - a 12	9 13 9 13	9 13 - 9 13	a 14 a 14		c 15(t 163 t 163	c 168 168	17	18	18
acggactttgttttggactatcccaacccgtgatgcccaacatgatcttcattggtg 	1 atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgctt 	1) ggagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaa 	1. aaagetatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggta 	1 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccca 	1 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatgg 	1 gtttatgaaagcatatgcaatggcgttcccatggtgatgatgcccttgtttggtgatca 	atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctgga 	1 atgacttctgaagatttagaaatgctctaaaagcagtcatcaatgacaaagttacaa 	1 gagaacatcatgogoctctccagocttcacaaggaccgocggtggagocgctggacct 	1 gocqigitcigggiggagitigigaigacacaaaggogogocacaccigogococogos 	tocttggacgtgattggtttoctottggc 	gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatg 	1 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggt 	gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 	agtgitaaattcattttattcttattaaggaaatactttgcataaattaatcagcccag 	1 agtgctttaaaaattctcttaaataaaaataatagactcgctagtcagtaaagatattt 	<pre>gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatt </pre>
78	8 8 8	06	96 96	102	108	114	1201	126	132]	1381	1441	1501	1561	1621	1681 1681	1741	1801 1801
OY Db	oy Op	ζ ₀ α	oy Dp	Qy Db	g ç	ò a	Oy Dp	07 09	QY QD	Oy Op	oy Op	Oy Op	Oy Dp	Oy Dp	Qy Db	Qy Db	Qy Db

```
1861 ggacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtt 1920
                1861 ggacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgtt 1920
                                  1921 gggagtgccggattcaaaggtggtcccaccgctgccctactgcaaatggcagttttaat 1980
                                             1921 gggagtgccggattcaaaggtggtccaccgctgcccctactgcaaatggcagttttaat 1980
                                                                                                        2101 tttagagtgtaggtgaaatgaatgactggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                       2101 tttagagigtaggigaaatgaatggattggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                                                                                                                                                                                                                                                          Bilirubin; UDP-glucuronosyltransferase; HUGBrl; HUGBr2;
                                                                                                                                                                                                                                                     (USSH ) US DEPT HEALTH & HUMAN SERVICE.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
16..784
                                                                                                                                                                                                                                                                                                                                                                                                      monoglucuronide; diglucuronide; ss.
                                                                                                                                                                                                                                                                                                                    AAQ27369 standard; cDNA; 2351 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2338..2343
/*tag= c
/number= 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  92WO-US00282
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   91US-0639453
                                                                                                                                                                                                                                                                                                                                                                                                                                                         /*tag= a
2330..2335
                                                                                                                                                                                                                                                                                                                                                       27-JAN-1993 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   /number- 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /*tag= b
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Owens IS, Ritter JK;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1992-284593/34.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P-PSDB; AAR26153.
                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                10-JAN-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10-JAN-1991;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 polyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PolyA_signal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9212987-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               06-AUG-1992.
                                                                                                                                                                                                                                                                                                                                      AA027369;
                                                                                                                                                                                                                                                                                                                                                                          HUG-Br1.
                                                                                      셤
                                                                                                         ŏ
                                                                                                                          g
                                                                                                                                            ŏ
                                                                                                                                                             g
                                                                                                                                                                                                 a
                                                                                                                                                                                                                   ŏ
```

```
2101 tttagagtgtaggtgaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                                                                                                                                                                                                                                                                                          2221 atcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagt 2280
                                                                                                                  2041 catctctgtcctgcttcataggtgccaccttgtgtgtttaaagaagggaagctttgtacc 2100
                                                                                                                                                                                                                                                                       2041 catctctgtcctgcttcataggtgccaccttgtgtgttttaaagaagggaagctttgtacc 2100
                                                                                                                                                                                                                                                                                                                                  2101 tttagagtgtaggtgaaatgaatgaatggcttggagtgcactgagaacagcatatgattt 2160
                                                                                                                                                                                                                                                                                                                                                               2161 cttgctttggggaaaaagaatgatgctatgaaattggtggtggtgttgtttgagaagata 2220
                                                                                                                                                                                                                                                                                                                                                                                           2161 cttgctttggggaaaaagaatgatgctatgaaattggtggtggtgttatttgagaagata 2220
                                                                                                                                                                                                                                                                                                                                                                                                                                                      2221 atcattgcttatgtcaaatggagctgaatttgataaaaacccaaaatacagctatgaagt 2280
                                                                            1801 gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcaga 1860
                             1801 gaatatgtatcgtgcccctccggtgtctttgatcaggatgacatgtgccatttttcaga 1860
                                                          1861 ggacgtgcagacaggctggcattctagattacttttcttactctgaaacatggcctgttt 1920
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human; uridine 5'diphosphate glucuronyltransferase enzyme; UGT1A9;
flavopiridol; cancer; gastrointestinal disease; parasitic infection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human uridine 5'diphosphate glucuronyltransferase UGT1A9 CDNA #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2281 gctgggcaagtttacttttttttttgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2281 gctgggcaagtttactttttttttgatgtttcctacaact 2320
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Location/Qualifiers
19..1611
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 /product- "UGT1A9"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Iyer L;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ABA05199 standard; cDNA; 2320 BP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           12-APR-2001; 2001WO-US12526
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       21-APR-2000; 2000US-0553829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       04-MAR-2002 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ۵
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ratain MJ, Innocenti F,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     /*tag=
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (ARCH-) ARCH DEV CORP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 2002-075093/10.
P-PSDB; ABB04430.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cytostatic; ss.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO200180896-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ABA05199;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ABA05199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                             g
                                                                                     g
                                                                                                                       ŏ
                                                                                                                                                                                ŏ
                                                                                                                                                                                                            Op
                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                               Ω
                                                          οž
```

```
increases conjugative enzyme activity or glucuronosyltransferase activity. This second agent should be capable of inhibiting biliary transport and may be a uridine 5'diphosphate glucuronyltransferase such as that encoded by the present sequence (designated UGTLAG). The method can be used in the treatment of cancer, gastrointestinal diseases and
Combinations of flavopiridol and an agent that increases conjugative enzyme activity or glucuronosyltransferase activity, with reduced side
                                                                                                                                          flavopiridol by administration in combination with a second agent that
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48] ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         721 ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 780
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          301 catgotoaatggaaagcacaagtacgaagtatatattototattaatgggttoatacaat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            481 ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 540
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    541 cactatottgaagaaggtgcacagtgccctgctcctttcctatgtccccagaattctc 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            541 cactatettgaagaaggtgeacagtgeeetgeteetettteetatgteeecagaattete 600
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     661 gaggaacatttattgccaccgttttttcaaaaatgccctagaaatagcctctgaaatt 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                661 gaggaacatttattatgccaccgttttttcaaaaatgccctagaaatagcctctgaaatt 720
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     61 tytictyctyctygacctytygactttyccyayycayyyaayctactyytaytygaccatyyat 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       181 gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg 240
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30] catgotcaatggaaagcacaagtacgaagtatatattototattaatgggttcatacaat 360
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      421 gaatacttaaaggagagttetttgatgeagtgtttetegatecttttgataactgtgge 480
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              61 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300
                                                                                                                         The present invention relates to a method of reducing the toxicity of
                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                                                                 0; Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 ctcagctgcagttctctgatggcttgcacagggtggaccagcccccttcctctatgtgtg 60
                                                                                                                                                                                                                                                                                                                                                                        DB 24; Length 2320;
                                                                                                                                                                                                                                                                                                                                                                                                                 0; Indels
                                                                                                                                                                                                                                                                                                                Sequence 2320 BP; 608 A; 495 C; 547 G; 670 T; 0 other;
                                                                                                                                                                                                                                                                                                                                                                                            ; Pred. No. 0; 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                        Ouery Match 100.0%; Score 2320; Best Local Similarity 100.0%; Pred. No. 0; Matches 2320; Conservative 0; Mismatches
                                                                                Claim 81; Page 141-144; 145pp; English.
                                          effects, for treating cancer
                                                                                                                                                                                                                                                                          parasitic diseases.
                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ōλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ω
    F F F X 8 X 0 0 0 0 0 0 0 0 0 X 8 8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ŏ
```

Combinations of flavopiridol and an agent that increases conjugative enzyme activity or glucuronosyltransferase activity, with reduced side Claim 80; Page 137-140; 145pp; English. effects, for treating cancer WPI; 2002-075093/10. P-PSDB; ABB04429

transport and may be a uridine 5'diphosphate glucuronyltransferase such as that encoded by the present sequence (designated UGTIA9). The method can be used in the treatment of cancer, gastrointestinal diseases and flavopiridol by administration in combination with a second agent that increases conjugative enzyme activity or glucuronosyltransferase activity. This second agent should be capable of inhibiting biliary The present invention relates to a method of reducing the toxicity parasitic diseases.

Sequence 2320 BP; 608 A; 495 C; 547 G; 670 T; 0 other;

ö 240 gggagccactggttcaccatgaggtcggtggtggagaaactcattctcagggggcatgag 180 241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300 241 aagacttattcaacttcatataccctggaggatctggaccgggagttcaaggcttttgcc 300 catgotcaatggaaagcacaagtacgaagtatatattototattaatgggttcatacaat 360 catgotcaatggaaagcacaagtacgaagtatatattctctattaatgggttcatacaat 360 540 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120 tgtctgctgctgacctgtggctttgccgaggcagggaagctactggtagtgcccatggat 120 gaatacttaaaaggagattettttgatgeagtgtttetegateettttgataaetgtgge 480 541 cactatottgaagaaggtgcacagtgccctgctccttttcctatgtccccagaattotc 600 541 cactatcttgaagaaggtgcacagtgccctgctctttcctatgtccccagaattctc 600 Gaps ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60 1 ctcagctgcagttctctgatggcttgcacagggtggaccagccccttcctctatgtgtg 60 gtggttgtagtcatgccagaggtgagttggcaactgggaagatcactgaattgcacagtg ttaattgttgccaaatatttctccctccctccgtggtcttcgccaggggaatactttgc 100.0%; Score 2320; DB 24; Length 2320; 100.0%; Pred. No. 0; tive 0; Mismatches 0; Indels 0; Matches 2320; Conservative Local Similarity Query Match 301 361 421 421 481

셤

Q ŏ a δý a å g ò g οy g ttagggttctcagatgccatgactttcaaggagagtacggaaccacatcatgcacttg 660

601

g ď g ö g 199

ttagygttctcagatgccatgactttcaaggagagagtacggaaccacatcatgcacttg

gaggaacatttattatgccaccgtttttttcaaaaatgccctagaaatagcctctgaaatt 720

1081 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1140 1381 gccgtgttctgggtggagtttgtgatgaggcacaagggcgccacacctgcgcccgca 1440 1501 gtcgtgctgacagtggccttcatcaccctttaaatgttgtgcttatggctaccggaaatgc 1560 961 aaagctatggcaattgctgatgctttgggcaaaatccctcagacagtcctgtggcggtac 1020 961 aaagetatggcaattgetgatgetttgggcaaaateeeteagaeagteetgtggeggtae 1020 1021 actggaacccgaccatcgaatcttgcgaacaacacgatacttgttaagtggctaccccaa 1080 1081 aacgatctgcttggtcacccgatgacccgtgcctttatcacccatgctggttcccatggt 1140 1141 gittatgaaagcatatgcaatggcgitcccatggtgatgatgcccitgittggtgatcag 1200 atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 1260 1201 atggacaatgcaaagcgcatggagactaagggagctggagtgaccctgaatgttctggaa 1260 1261 atgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaag 1320 1261 atgacttctgaagatttagaaaatgctctaaaagcagtcatcaatgacaaaagttacaag 1320 1321 gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagcgctggacctg 1380 1321 gagaacatcatgcgcctctccagccttcacaaggaccgcccggtggagccgctggacctg 1380 1381 gccgtgttctgggtggagtttgtgatgaggcacaagggcgcgccacacctgcgccccgca 1440 1441 goccacgacotcacctggtaccagtaccattccttggacgtgattggtttcctcttggcc 1500 1441 geceaegaecteaectggtaecagtaecatteettggaegtgattggttteetettggee 1500 1501 gtcgtgctgacagtggccttcatcacctttaaatgttgtgcttatggctaccggaaatgc 1560 1561 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggt 1620 1561 ttggggaaaaaagggcgagttaagaaagcccacaaatccaagacccattgagaagtgggt 1620 1621 gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaacagaatc 1680 1621 gggaaataaggtaaaattttgaaccattccctagtcatttccaaacttgaaaaacagaatc 1680 1681 agtgitaaaitcattitattoitattaaggaaatactitgoataaattaatcagococag 1740 1681 agtgttaaattcattttattcttattaaggaaatactttgcataaattaatcagcccag 1740 1741 agtgotttaaaaaattotottaaataaaataatagaotogotagtoagtaaagatattt 1800 781 acggactttgtttttggactatcccaaaccogtgatgcccaacatgatcttcattggtggt 840 721 ctccaaacacctgttacggagtatgatctctacagccacacatcaatttggttgttgcga 780 781 acggactttgttttggactatcccaaacccgtgatgcccaacatgatcttcattggtggt 840 841 atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900 841 atcaactgccatcagggaaagccgttgcctatggaatttgaagcctacattaatgcttct 900 ggagaacatggaattgtggttttctctttgggatcaatggtctcagaaattccagagaag 960 901 ggagaacatggaattgtgggttttctctttgggatcaatggtctcagaaattccagagaag 960 셤 셤 g g δ ö ò ö 셤 ò 셤 ò g ò 셤 ò 셤 οŽ ŏ g δ g à 셤 ò g õ 셤 õ 셤 à 셤 ð

```
(without alignments)
5836.679 Million cell updates/sec
                                                                                                                                                                                                                                                                        1 ctcagctgcagttctctgat.....ttctgatgtttcctacaact 2320
                                                                                                                                    August 21, 2002, 12:45:22 ; Search time 682.45 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                3472872
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                  1736436 seqs, 858457221 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Maximum Match 100%
Listing first 45 summaries
                                                                                    OM nucleic - nucleic search, using sw model
                                                                                                                                                                                                                                                                                                                    IDENTITY_NUC Gapext 1.0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N_Geneseq_032802:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Post-processing: Minimum Match 0%
                                                                                                                                                                                                                           US-09-835-082-3
                                                                                                                                                                                                                                                   Perfect score:
                                                                                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database :
                                                                                                                                                                                                                                                                        Sequence:
                                                                                                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                      Run on:
```

/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1999.Darr.*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000.DArr.*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2000.DArr.*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001a.DArr.*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2001b.DArr.*
/SIDS1/gcgdata/geneseq/geneseqn-embl/NA2002.DArr.* /SIDSI/gcgdata/geneseq/geneseqn-embl/NA1992.DAT:*/SIDSI/gcgdata/geneseq/geneseqn-embl/NA1993.DAT:*/SIDSI/gcgdata/geneseq/geneseqn-embl/NA1994.DAT:*/SIDSI/gcgdata/geneseq/geneseqn-embl/NA1994.DAT:*/SIDSI/gcgdata/geneseq/geneseqn-embl/NA1995.DAT:*/SIDSI/gcgdata/geneseq/geneseqn-embl/NA1996.DAT:*/SIDSI/gcgdata/geneseq/geneseqn-embl/NA1997.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1990.DAT:* /SIDS1/gcgdata/geneseg/genesegn-emb1/NA1998.DAT:* /gcgdata/geneseq/geneseqn-embl/NA1989.DAT:* /SIDS1/gcgdata/geneseq/geneseqn-embl/NA1980.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1981.DAT:*/SIDS1/gcgdata/geneseq/geneseqn-embl/NA1982.DAT:* | SIDS1/gcgdata/geneseq/geneseqn-embl/Na1983.DAT:* | SIDS1/gcgdata/geneseq/geneseqn-embl/Na1984.DAT:* | SIDS1/gcgdata/geneseqn-embl/Na1985.DAT:* | SIDS1/gcgdata/geneseq/geneseqn-embl/Na1985.DAT:* | SIDS1/gcgdata/geneseq/geneseqn-embl/Na1986.DAT:* | SIDS1/gcgdata/geneseq/geneseqn-embl/Na1987.DAT:* | SIDS1/gcgdata/geneseq/geneseqn-embl/Na1987.DAT:* | SIDS1/gcgdata/geneseqn/geneseqn-embl/Na1988.DAT:* | SIDS1/gcgdata/geneseqn/geneseqn-embl/Na1988.DAT:* | SIDS1/gcgdata/geneseqn/geneseqn-embl/Na1988.DAT:* | SIDS1/gcgdata/geneseqn/geneseqn-embl/Na1988.DAT:* | SIDS1/gcgdata/geneseqn/geneseqn-embl/Na1988.DAT:* | SIDS1/gcgdata/geneseqn /SIDS1/gcgdata/geneseg/genesegn-emb1/NA199 /SIDS1

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	Human uridine 5'di	Human uridine 5'di	HUG-Br1. Homo sap	HUG-Br2. Homo sap	DNA encoding novel	DNA encoding UDP q	Human UGT1A7 relat	Human UGT1A7 relat	Exon 5 from the UG
QI	ABA05198	ABA05199	AAQ27369	AAQ27370	AAS91252	AAS18543	AAH51403	AAH51404	AAQ33027
BB :	24	74	13	13	23	24	21	21	13
Length	2320	2320	2351	2368	1655	18887	1001	1001	1667
% Query ore Match Length DB I	100.0	100.0	68.2	0.89	6.99	43.3	43.0	37.5	34.4
Score	2320	2320	1581.4	1576.8	1551.8	1004.4	9.866	870.6	798
Result No.	1	7	3	4	2	9	7	æ	O

Ratain MJ, Innocenti F, Iyer L;

Human UGT1A7 relat UDP-glucuronosyltr UDP-glucuronosyltr UDP-glucuronosyltr UDP-glucuronosyltr Murine apoptosis r Human lung tumour Human lung tumour Human UGT1A7 relat Human UGT1A7 relat Human UGT1A7 relat Human UGP1A7 relat Human UDP-glucuron UNA encoding novel Uridine diphospho- Human UDP-glucuron Human Colon cancer Human UDP-glucuron Human GODON HU	Human DNA encoding DNA encoding novel Human oclon cancer Human GOINA relat DNA encoding novel Rat hepatocyte car Exons 3-4 from the Rat hepatocyte car Exons 3-4 from the Rat hepatocyte car DNA encoding novel
	2 AAS46185 3 AAS46185 3 AAS69710 1 AAC98478 1 AAH51408 3 AAS91253 3 AAS91253 3 AAS73026 3 AAS7493 3 AAS7493 3 AAS78713 3 AAS78713
1001 930 235 735 735 735 735 736 736 736 736 736 736 736 736 736 736	2974 22 1785 23 17185 23 17185 23 1001 23 202 2 366 21 277 13 273 23 2448 23 2448 23 2448 23 2448 23
3333 3333 3334 334 335 336 337 337 337 337 337 337 337 337 337	0.000000000000000000000000000000000000
766 . 6 775 . 6 771 . 7 771 . 7 7	322.4 314.6 302.4 302.4 230.4 222.4 203 203 203 203 203
011011111111111111111111111111111111111	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
	0 0 0 0 0

ALIGNMENTS

```
65tr
                                                                                          Human; uridine 5'diphosphate glucuronyltransferase enzyme; UGT1A9; flavopiridol; cancer; gastrointestinal disease; parasitic infection;
                                                                        Human uridine 5'diphosphate glucuronyltransferase UGTlA9 cDNA #1.
                                                                                                                                                   Location/Qualifiers
                                                                                                                                                                      /*tag= a
/product= "UGT1A9"
                 ABA05198 standard; cDNA; 2320 BP.
                                                                                                                                                                                                                                                           21-APR-2000; 2000US-0553829.
                                                                                                                                                                                                                                       12-APR-2001; 2001WO-US12526.
                                                     04-MAR-2002 (first entry)
                                                                                                                                                             19..1611
                                                                                                                                                                                                                                                                           (ARCH-) ARCH DEV CORP.
                                                                                                              cytostatic; ss.
                                                                                                                                                                                                  WO200180896-A2.
                                                                                                                                 Homo sapiens.
                                                                                                                                                                                                                     01-NOV-2001.
                                    ABA05198;
        ABA05198
RESULT
```